Trust and the Role of Transparency in the Context of the Investment Decision: Evidence from Institutional Investors

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Elisabeth Farmer

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Prof. Dr. Rudolf Volkart

Prof. Alexander F. Wagner, Ph.D.

The Faculty of Economics, Business Administration and Information Technology of the University of Zurich hereby authorizes the printing of this Doctoral Thesis, without thereby giving any opinion on the views contained therein.

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Chairman of the Doctoral Committee: Prof. Dr. Dieter Pfaff

Acknowledgments

To my grandfather Karl

The idea for this essay was triggered by observing the turbulences in the credit markets in 2007 and the following crisis. There were regular news reports on the decline of trust in the markets and the accompanying demise of interbank trade, and the public was calling for transparency.[1] At that time I was focusing on the topic of *Value Reporting* in which the concept of transparency plays an important role as well.[2]

It was at that point that I started to ask myself what kind of trust people were talking about and why I had not been aware of the topic before when everything seemed to be "good". One feature of trust is that its high relevance to human and social interaction becomes immediately evident as soon as it begins to disappear. The lesson I have learned from the latest financial crisis is that once mistrust prevails, life gets very complicated and interaction may even break down completely.

Demanding transparency after a crisis seems intuitively plausible but what is the exact relation of information and trust, especially in the context of investing? Does it really make sense to demand transparency when longing for trust? The present essay tries to get to the bottom of these questions.

The research presented was developed and written during my time as a research assistant at the Department of Banking and Finance at the University of Zurich. I am deeply grateful to all those who accompanied me on my path.

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[1] The Neue Zürcher Zeitung reported for example: "Späte Offenbarung" (Gallarotti (2007)), "Die Kreditkrise ist eine Vertrauenskrise—Am Obligationenmarkt herrscht weiterhin grosse Nervosität" (Ferber (2007)), "Tiefsitzende Ängste bei den Investoren—Nur Schuldner mit höchster Bonität nehmen derzeit Kapital auf" (Ferber (2007)), "Wer einmal lügt ... Misstrauen gegenüber "Financials" trifft besonders deutsche Banken" (Rasch (2007)), "Die Banken trauen einander nicht mehr—Vertrauenskrise als schwere Hypothek für den Markt" (Szalay (2007)).

[2] Value Reporting refers to "the official, external reporting of a company, which is designed (i) to reduce the information asymmetries between the internal and external view of value based management and (ii) is additionally part of value based management" (Labhart (1999), p.30).

Affolter, especially for our sessions in mental gymnastics. I am grateful to Marco Knuchel and Bernhard Fuchs from the Holcim Investor Relations Team who gave me the opportunity to engage in an empirical playground. In particular I want to thank Martina Scarcella for her most concrete support and great work which made it possible for me to concentrate on the research when needed. Thank you to Florian Eugster and René Hegglin for their Netquestionnaire, SPSS, and LaTex support. Special thanks also to Dr. Andreas Kuhn and Lucas Rosinus for their statistical assistance and Laurie Conway for thorough linguistical feedback.

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I. Preliminaries

"In short, the investment problem is complex and requires treatment of many magnitudes, each with a variety of dimensions. Because the problem is intrinsically so difficult, the literature on the subject reports a number of different analytical approaches many of them complementary but not a few contradictory."
Meyer and Kuh (1966), p.6.

A. Relevance of the Topic

The present doctoral thesis deals with the phenomenon of trust in the context of the investment decision and the role of and interdependency between information transparency and trust from an institutional investor's point of view.

Trust is basic and ubiquitous. Nobody would doubt the high relevance of trust for human, social, and thus, economic relationships as well. Trust is also supposed to be "the unseen faith underlying the investment value" (Olsen (2008), p.2189) and one of the fundamental preconditions for a proper functioning of financial markets (Volkart (2011), p.64 and McMillan (2002)).

What seems to be intuitively plausible, is at the same time rather vague, with the precise meaning and role of trust remaining somewhat blurry. Also, academic contributions on trust in the context of investing are relatively rare. The most important reason for this reluctance lies in the assumptions underlying the prevalent neoclassical models of financial economics which tend to restrict, if not prohibit, the analysis and integration of trust. This is why this essay aims at shedding some light on the phenomenon of trust in the context of the investment decision and at highlighting the role of information in trust formation in such a context.

Despite the vibrant interest on the topic of trust in socio-economic research over the last decade, no consensus has yet been reached amongst scholars concerning either the definition or the measurement of trust.[3] The first step in the essay thus entails a review of the literature on trust which shows the multiple dimensions and facets of this human and social phenomenon, in order to define

[3] The attendance of a conference on trust in November 2010 in Zurich—"Vertrauen im Streit der Interpretationen: Hermeneutische und methodische Probleme heutiger Vertrauensforschung"—organized by the Institut für Hermeneutik und Religionsphilosophie, the Institut für Empirische Wirtschaftsforschung, and the Forschungsstelle für Sozial- und Wirtschaftsgeschichte in cooperation with the Collegium Helveticum, confirmed that the problem of trust has still not been "solved".

it for the purposes of the present essay.[4]

The insight extracted from the literature on trust is then applied to the context of investing. It turns out that first, there are different forms of trust which feed into the final investment decision. Second, the act of investing itself can be modeled as a trusting action which is embedded in and influenced by its social context. And third, the standard investment decision calculus of risk and expected return can be extended to take account of the factor trust.

The relevance of these insights can best be demonstrated by modeling trust and investing as a process which is embedded in a relationship between the institutional investor as the trustor and the firm[5] as the trustee. The main elements of the process are the establishment of trustworthiness and the manifestation of trust in the act of investing, where the former is the precondition of the latter. Consequently, the firm as trustee should be interested in establishing a trustworthy reputation.

Trustworthiness is formed as the trustor observes competence, integrity, and goodwill of the trustee, and is not primarily a matter of information provision. However, in the *establishment* of trustworthiness with respect to investing in listed firms, information does play a crucial role. Trustworthiness in the context of investing has not only to be lived but also transmitted, an aspect that underlines the vital importance of corporate communication. The significance of information is accentuated by the one-sided dependency of the investor on receiving relevant and reliable information from the firm. A firm's endeavor to transmit this information is referred to as transparency effort. Besides helping investors to take better informed decisions, an enhancement of information provision itself can be seen as a trustworthy signal. First, because transparency can only be lived with firm outsiders when a firm's internal structure is well manageable. And second, because a spirit of openness also implies that there is nothing to hide.

Thus, any information transparency effort undertaken by a firm is linked first and foremost to the establishment of a trustworthy reputation which is a precondition for investors as trustors to fulfill the trusting act of investing.

[4] As trust is an area of ongoing research and contributions are vast and increasing rapidly the present essay does not provide a complete survey of the literature. I rather chose those contributions that are, from my point of view, relevant, in order to explain the breadth of trust as a human and social phenomenon.

[5] The terms "firm", "company", and "corporation" are used interchangeably throughout the text.

B. Research Questions

The goal of this essay is to find suitable responses to the following research questions:

- *Research Question I: How is trust defined, is it also a phenomenon in economic exchange, and can it be analyzed in economic terms?*
- *Research Question II: What is the role of trust for the investment decision and within the investment relationship?*
- *Research Question III: What is the role of information in establishing trust within the investment relationship?*
- *Research Question IV: Is there an interrelationship between the investors' perception of trustworthiness and the transparency effort of a listed firm?*

C. Changing Environments

Prior to embarking upon a more technical analysis of trust and its characteristics in the context of investing, I want to show via some preliminary remarks, that owing to its multiple forms and facets, trust remains a highly challenging topic both in practical life and in research. It seems to be a defiance to the society in general because of the incisive changes that took place over the last century and that relate to the origin for trusting attitudes and actions to arise, which is *complexity* and the consequent *uncertainty* individuals and organizations face. Complexity results from social interaction and increases with the number of uncertain and possible interrelationships (Luhmann (2000)).

What sounds rather confusing at first becomes evident when thinking of the effects of an absence of trust. What would a world look like without the "trusting atmosphere" that surrounds us? What if the butcher is a psychopath and uses the knife not on the requested steak but on the customer in front of the counter? What if the cleaning lady does not clean your fridge but steals your diamonds instead? What if the banks do not return the money we put on their accounts as promised? The trust literature refers to the effect of an absence of trust as uncertainty. The resulting complexity would be overwhelming for humans and likely to lead to fear and disaster. This is why trust is also called the *lubricant* of social interaction.

The last century saw many ways to deal with complexity in social life, hence decreasing it, but simultaneously complexity increased on different ends. In pre-modern times while the level of uncertainty and danger was in some ways higher than nowadays, social systems were smaller and thus, less complex. Additionally, social norms and sanctions were relatively strong and this made individual trust less necessary. The increasing division of labor, the growing differentiation of roles and individuality have all given rise to the need for more individual trust than was the case in pre-modern times. Nowadays, as it has become impossible to question everything we consume, faith in expert knowledge has gained in significance (Bosshardt (2001)).[6]

The increasing size of social systems, a development fostered by the availability of ideas and economic resources, has also expanded the potential for interaction and thus complexity. Mankind has responded to the expansion of systems by ever greater institutionalization, in an effort to handle the increased complexity. This can also be seen as one merit of modern societies. Just as close social norms are instrumental for the proper functioning of smaller communities, it is only through institutions that large communities and system are able to function. Institutions transform subjective opinion into objective conventions and are thus ways of gaining transparency. They also serve to stabilize expectations through the provision of information and the potential for sanctions. The larger the system, the greater the complexity of interaction and as a result the more intense the need for suitable institutions. They constitute the rules of the game of human interaction in a world of social interdependence (Ripperger (1998)).[7]

Thinking of the state of the world today in terms of interconnectedness, it can be said the world has become a village, wired to one big system. Information technology has exercised an enormous impact on the functioning of the world because of the exploitation and distribution of information, more memory capacity and access possibilities across space and time, and the possibility of immediate feedback and constant updating.

[6] The division of labor meant the start of proficiency. Detailed knowledge is dispersed among experts, which implies that one person knows less about everything but more about something. This has had an impact on social exchange as there is growing ignorance about things. Up to a certain point there remain ways to inform oneself but, in today's globalized world, it is illusory to believe that one can look behind all scenes.

[7] Hubig (2007) refers to Anthony Giddens (1995) when saying that today there is a trend to a dissolution of the personalized inherited environments in favor of a variety of abstract references of individuals to institutions and organizations. Through this trend, even greater gaps of space and time are being made bridgeable and in a certain sense also controllable.

Despite the enhancement of life through institutionalization, uncertainty has still grown rapidly, apparently stimulated by information technology.[8] This indicates that despite more information being accessible, living environments may once again have become more confusing. They move and change more quickly and become ever more complex as reference and orientation points as well as paradigms of identification change or disappear with the process of de-institutionalization.[9]

According to Hubig (2007), a dissolution of the former culture of trust but simultaneously the genesis of a new culture of trust can be noticed and is necessary. Luhmann refers to this new form of trust as *system trust* which is seen to evolve of personal trust. System trust is said to entail conscious renouncement of the need to search for further information or to apply control mechanisms in order to expand our possibilities of action (Luhmann (2000)).[10]

Coming back to the focal topic, the additional changes in the social structure described above have also left their mark on the financial system. And, the investment decision per se can be said to be a complex undertaking as well. First, because it means guessing about an unknown future. Second, because such guessing is based on information that investors do not own. Investing entails a one-sided dependency, since it involves receiving relevant and reliable information in order to take a decent decision. Third, investing involves complexity since it implies giving up full control over one's own money. Fourth, the investment decision is not only a decision to invest in a firm but is most probably also part of a portfolio decision, and it is certainly embedded in an economic environment involving numerous interrelationships. Finally, the na-

[8] Hubig (2007) calls our society a risk society. In 2007 more data was generated than can be saved on memory space worldwide. Today more information is being produced than our brain can process. Access to more information does not necessarily mean more knowledge. It rather leads to a free view over a sea of data, which might primarily lead to disorientation (Achermann et al. (2010)).

[9] De-institutionalization can be noticed through developments such as more fractal and dynamic progress, individualization, dis-embeddedness, and anonymous community building in virtual networks. On December 26, 2010 the Neue Zürcher Zeitung (Biswas (2010)) wrote "Bloggen, twittern, chatten: Die Ernüchterung ist absehbar. Permante Pflege der virtuellen Identität als neue Überforderung."

[10] As system trust is a derivative of personal trust, humans easily confuse the two. They may put too much good faith into the system, although caution would be needed. Hubig (2007) warns against a "trap of trust" which means that old "known" ways to act on a personal level shall not be applied thoughtlessly to the system setting. The internet is a good example for the tension that inheres system trust. It is a system that is built on trust. It would not be able to function without trust which in turn would cause serious limitations for our society. As this system trust is very similar to personal trust, people often do not act cautious enough, for example when providing personal information (Bierhoff (2008)).

ture of investing and its environment is dynamic, an aspect which is amplified through global interconnectedness.

Some of the complexity aspects described are reduced through the institutionalization of financial markets. Interacting parties on financial markets agree to certain rules and conventions which diminishes uncertainty compared to what would be present in an informal investment setting. At the same time the system itself has expanded due to global interconnectedness. This increases scope for action as well as the potential for complex interrelationships and the need for experts because not everything can be overlooked by each single individual. This development consequently increases the ignorance of each individual and dependency on others.

The description of these developments highlights that investing is not only a decision for a specific firm but that various other aspects play a role as well. Further, even though investing is nowadays highly institutionalized, the investment context remains highly complex. In order to be able to take decisions and perform actions, the investor has to find ways to deal with the present complexity. It will be shown that trust is indeed a crucial element for investing, investing itself can be seen as an act of trust, and that even though system trust is essential for financial markets, trust can only result from each and every individual in the market, namely, trusting in the integrity of their exchange partners.

D. Proceedings

The remainder of this essay is divided into six sections and organized as follows. I start by introducing in Section II the idea of trust as a way of handling the complexity the investor faces regarding the investment decision.

In Section III the various dimensions and forms of trust are considered by gathering information from different areas of social sciences. This section serves as an overview and introduction to the topic of trust. I chose contributions which, from my point of view, appear relevant in explaining the breadth of trust as a human and social phenomenon. In particular, I review the different perspectives on trust from an economic point of view.

Section IV introduces the procedural and dynamic nature of trust from two perspectives. First, regarding the initial process of establishing the necessary expectation of trustworthiness in order to actually fulfill the trusting action. And second, by looking at trust as embedded in the ebb and flow of a relationship and its influence on updating the perception of trustworthiness and the form of trust.

Section V applies the insights of Section III and IV to the context of investing. I show the different forms of trust involved in the investment environment and their interrelationship, and discuss the theoretical framework for investor trust. I then place the investment decision in a wider perspective, namely the process of investing, and specify this process from an institutional investor's point of view. The standard decision calculus of risk and expected return is extended to include the factor trust. I further widen the process of investing and show, that when looking at the investment decision as embedded in a relationship between the asset manager and the firm, this relationship might be the site where trust originates and develops. Finally, I model the investment process together with the trust process.

In Section VI I elicit the role of information and information transparency both within the investment context as well as for the process of trust. I first go into the role of information for the investment decision from a theoretical and empirical point of view and define information transparency within the context of investing. I then point out the different roles that information plays within the process of trust and integrate these aspects of information into the investment-trust process model of Section V.

Section VII describes the empirical investigation and summarizes the results of a survey done with institutional investors on the perception of trustworthiness and transparency regarding a listed firm. This was intended as a challenge to the theoretical discussion on the topic. The perception of trustworthiness and transparency is measured in terms of several factors. Competence, integrity, and goodwill are used for gauging overall perceived trustworthiness and substantial information, participation, accountability, and openness generating overall perceived transparency. The interrelationship between the trustworthiness and transparency perception is analyzed. Potential differences between the overall trust in a firm and in its management are checked upon, and investor and relationship characteristics are included in the analysis. Further, the interdependency of different forms of trust within the investment context are examined.

Finally, the last section concludes by responding directly to the research questions, highlighting insights, limitations, and further ideas.

II. Introduction: Life is Complex, So is Investing

"The enormous complexity with which we are struggling in the exploration of the human organism, climate change or the financial markets, brings us especially one thing: the realization that everything is much more complicated than we imagined, and that we are only at the very beginning of the decoding of the world." Achermann et al. (2010), p.4.

I would like to start this essay by observing that all human beings face two phenomena: one is *complexity*, a fundamental feature of human life which follows from the causal interconnection of multiple uncertain events and which increases both with the number of possible, but uncertain events as well as with the number of possible interrelationships. The other concerns the problems human agents face in handling this complexity. Not everything in life is uncertain, but uncertainty is by definition present whenever humans interact with each other and have to take decisions which refer in some way to the future (Luhmann (2000), Ripperger (1998), and Steigmaier (2008)).

A. Forms of Uncertainty

Ripperger (1998) distinguishes between different forms of uncertainty in order to later apply them as criteria for demarcation for different forms of trust. *Objective uncertainty* is caused by *coincidence*, whereas *subjective uncertainty* refers to the uncertainty of human agents regarding their assessment of the world, summarized under the term *error*. Subjective uncertainty might be caused by a lack of information or the inability to process information correctly.

Further, Ripperger distinguishes between *exogenous and endogenous uncertainty*, a distinction which does not refer to the cause but rather the matter in question. Exogenous events and their probability of occurrence cannot be influenced by agents, e.g. natural events. In contrast, endogenous uncertainty arises through the interaction of agents insofar as decisions and actions might influence others' decisions and actions. This form of uncertainty can be further broken down into problems of coordination and motivation: coordination refers to the competence and capability of agents, whereas motivation relates to the willingness of agents to perform in a certain way. This last form of uncertainty is referred to as *behavioral uncertainty*.[11]

[11] Clearly, different forms of uncertainty may influence each other.

From an economic perspective, uncertainty per se is not the problem but rather the potential economic *consequences*, i.e. the consequences for the agents' utilities. Decisions with different consequences are uncertain in the sense that it is not known which consequence occurs, i.e. agent utility is contingent. Ripperger (1998) defines this form of uncertainty as *risk*. Risk includes the possibility of utility loss or missed utility gain following from choosing a certain strategy of action beyond the control of the agent, and which is caused through the occurrence or not-occurrence of objectively or subjectively uncertain events which can be exogenous or endogenous.[12]

B. Dealing with Uncertainty

Human beings need to find ways to handle the risk they face. One way to reduce the complexity of action is *risk limitation* by negotiating an *explicit contract*. Risk limitation can be realized either by decreasing the probability of the damaging event or by decreasing the size of damaging consequences for the agent. Exogenous risk cannot be controlled directly by the agents but its economic consequences can be reduced, for example the risk of an earthquake cannot be influenced but an insurance contract can be arranged to minimize the financial consequences. While the total amount of risk is not reduced, the individual risk is. In the case of endogenous risk both the probability of negative occurrence and the damaging consequences can be influenced by the agents involved but need to be compensated accordingly. The agents can decide whether and how to interact, for example through the possession of a collateral, and arrange for coverage given the deal decided upon (Ripperger (1998)).

The above approach sounds reasonable, so why consider an alternative at all? First of all, because no contract is free. And secondly, the perfect contract is a fictitious construct (Volkart (2008b)). In designing contracts future contingencies need to be anticipated but the degree to which they match reality always remains uncertain. And even regarding "certain" past or present information, information asymmetries and bounded rational players are always part of the game. Thus, reasons for seeking alternative arrangements may focus on

[12]This distinction between uncertainty and risk will be used in Section III, B.2 to distinguish between different forms of trust. Further on in the text the two terms will be used interchangeably. For a discussion on the classical distinction between uncertainty and risk where uncertainty refers to a situation where the probability distribution of the occurrence of events is not known, whereas for risk it is known, see for example Farrar (1962) or Volkart (2011), pp.204 and 205.

the need to overcome any gaps with respect to remaining uncertainties. It will be shown that *trust* can be seen as another, functionally equivalent mechanism for stabilizing uncertain expectations and reducing the complexity of human interaction in the face of uncertainty (Luhmann (2000) and Ripperger (1998)).

C. Investing and Uncertainty

Focusing now on the specific matter of interest in this essay, what can be said about uncertainty in the investment setting[13]?

The basic idea of investing is that an agent[14] who does not need money for immediate consumption lends it to another agent with the goal and promise of receiving it back in the future together with some form of compensation. The present essay concentrates on *institutional investors*[15], i.e. those who professionally invest money in *listed* firms, with the goal of receiving a certain return.

This principle sounds simple but the investment decision is nevertheless a complex undertaking. I summarize below the various potential uncertainties which arise in such a situation and which are crucial for the following sections:

- Investing is always a problem of a relationship between two or more agents.
- Investing always refers to the future. Even though the investment decision has to be taken in a very moment, it involves a guess about the future and its realization.
- In order to make an investment decision the potential investor needs information which she[16] herself can only provide to a certain degree.
- From the first moment of the investment the investor gives up control over her money. Therefore, investing means to handing over full control of one's money to someone else.
- The act of investing not only mean a loss of control but also implies willingness to rely on someone else for further information. The investment decision has to be continually re-evaluated and renewed over time. The need to rely on external sources of information remains also post-investment.

[13]Investing in this essay always refers to the context of *financial* investment.
[14]The term "agent" refers to economic players that can be human beings or organizations.
[15]Throughout the text the term "investor" will be used for both debt and equity investors unless otherwise stated.
[16]Throughout the text the female form is used in place of all individuals.

Although the extent of the above mentioned uncertainties will vary depending on the form of financial investment the investor chooses, i.e. generally spoken whether debt or equity investment, they always remain present.[17]

I view the investment decision in the context of institutional investing as incorporating both institutional and individual elements. Individual freedom is limited in an institutional setting, but institutions are nevertheless represented by individuals, the asset managers on the investor side and the management on the firm side.[18]

For the asset manager the decision to invest in a company depends not only on the specific features of the firm in question but is seen within a portfolio context embedded in the investment environment. As I focus on the investment decision within a market setting, the current situation of the markets and institutional parameters such as the economic and legal environment also influence the investment decision. Figure 1 applies the different forms of uncertainty introduced at the beginning of this section to the context of institutional investing.

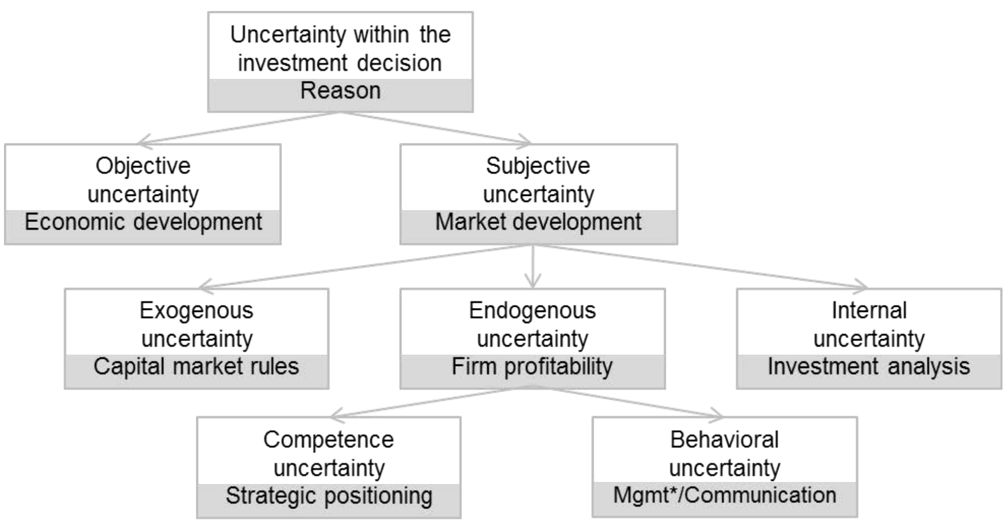

Figure 1. Forms of Uncertainty within the Investment Context. This figure shows the different forms of uncertainty and their reasons (displayed in gray) which the investor faces in the context of the investment decision (adapted from Ferber (2004), p.25). *Mgmt stands for Management

Institutional investing may incorporate both objective and subjective uncertainty, i.e. uncertainty resulting from unexpected changes in economic develop-

[17] Most forms of uncertainty are more distinct for shareholders than for other types of investors.
[18] I will pick up this thought again in Section V, C.

ment, and human error regarding the specific market developments. This last form of uncertainty may be either exogenous, e.g. the impact of capital market rules, which are not directly controllable by each market participant, or endogenous, e.g. firms' profitability as influenced by the agents of the firm in terms of their decisions concerning strategic positioning, choice of an honest management, and credible communication. Finally, so-called "internal uncertainty" also exists. This refers to the uncertainty stemming from market participants such as asset managers to believe in their own capabilities in investment analysis.

Looking at the different aspects of uncertainty which accompany the investment setting, the main question revolves around the issue of whether trust, in addition to explicit contracts, can serve as a mechanism for stabilizing uncertain expectations. As to date only very little research on trust within the investment context has been carried out, the next section gives an introduction to the polysemous phenomenon of trust. The insights gained will then by applied to the context of investing in the later sections.

III. Dimensions of Trust

"Asking too little of trust is just as ill advised than asking too much." Gambetta (2000), p.235.

Trust is of primary significance for human life. Thus, it is natural that every strand of social science has been working on the trust phenomenon with the result that, due to the partially competing views and assumptions of the different disciplines on human behavior, various definitions of trust have arisen. This problem of definitional elusiveness is simply a reflection of the nature of trust itself. The meaning of the word varies depending on the person who uses it and on the context it is being used in. There is no final consensus as it is an area of ongoing research. In this section insights on trust from philosophy, psychology, sociology, and economics are brought together. The goal is to describe the fundamental aspects and the numerous facets of trust as a human and social phenomenon. These are later applied to the context of investing.

A. The General Necessity and the Personal Capacity to Trust

Sociology focuses on the *necessity* for human beings to trust. While one might be able to choose whom or what to trust and to what extent, humans need trust as a way to "reduce the complexity" they are objectively confronted with (Luhmann (2000) and Steigmaier (2008)). Complexity for Luhmann (2000) derives from the causal connection of several uncertain events, and increases as their number and interrelations rise. Trust in the sense of Luhmann is not just a way to simplify life. While trust allows for the reduction of existing complexity, it also creates new opportunities and thus new complexity. It might make life easier, but more importantly, it opens up the possibilities of experience and action. In other words, trust transforms objective uncertainty into subjective certainty which increases the tolerance of uncertainty (Bierhoff (2008)).

According to Luhmann (2000), humans would live in a permanent state of existential fear if they were truly conscious of the extent of uncertainty surrounding them. As to psychological research such a level of awareness is thankfully not common.[19] Generally, the human species is geared with a positive attitude towards life. Humanity is imbued with a fundamental desire for self-preservation,

[19] Interestingly, behavioral science has been able to document a hormonal link between trust and fear. Ocytocin, a trust stimulating hormone is produced at the same place in that part of the brain which is also responsible for feelings of fear (Zinkant (2008)).

although to some extent this might represent a form of self-deception (Petermann (1996) and Fehr (2009)).

The personal capacity for trust is not the result of a conscious decision but something the individual learns during the process of socialization. It is normally seen as a character trait whose formation is largely determined in early childhood. Culture has a significant impact (Fukuyama (1996), Guiso et al. (2006), and Marková and Gillespie (2008)), as do parental relationships and personal experiences with others (Bierhoff (2008), Fischer and Kaplow (2008), and Ripperger (1998)). This form of trust is called *generalized trust* or *disposition to trust*. It is a crucial component in the general attitude of individuals, and normally considered very hard to influence in later years (Kenning and Blut (2006) and Ripperger (1998)). Whether the generalized trust level of a person shapes the amount of trust that a person is willing to offer regarding a specific situation is still a matter of dispute. Nevertheless, it is believed to be a strong general attitude affecting overall behavior, but having only little influence on other specific forms of trust (Kenning and Blut (2006)).

B. Characteristics of a Situation of Trust

In defining trust two strands in the literature can be distinguished. The first one focuses on trust as a belief, an *expectation*. For example, Rousseau et al. (1998) define trust as a "psychological state comprising the intention to accept vulnerability based upon positive expectations of intentions and behavior of others" (p.395). According to psychology, trust is a positive *attitude* towards someone or something.

But, and this refers to the second strand in literature, trust also has to be a "practical" attitude since an advantage only results if the *action* following and fulfilling the expectation manifests itself as trustful (Hartmann (2008)). Application is necessary, just as Aristotle said: "The very insight does not move anything, but only the practical thinking which is pointed to a certain purpose." (Cited in Grimm and Capurro (2007), p.16.) For Luhmann (2000) the trusting action is revealed by the placing a of a so-called "risky advance"[20].

In this sense, trust is both an expectation and an action (Ripperger (1998)). Trust is also a "social" attitude as it would not be needed if only one person existed. Besides interdependence, indeterminacy is also a condition for trust (Olsen (2008)).

[20]In German "risky advance" is "riskante Vorleistung".

To summarize, three fundamental prerequisites must be met for trust to be a possible strategy of action:

- Trust always *refers to a subject.*[21]
- Trust implies some form of *uncertainty* which entails a potential for negative consequences, i.e. vulnerability.
- This vulnerability is *positively*, *voluntarily*, and *willingly* accepted.

B.1. Reference Subjects

Trust is always geared to a subject, even if this is not realized consciously. There is a trusting, trust giving party (the trustor) and a trust receiving party, the reference subject to be trusted (the trustee). The reference subject can be a person or a group of people, social roles, organizations, products, or society as a whole. Figure 2 illustrates the trust relationship between trustor and trustee and the two facets of trust: First, the establishment of an expectation to trust through examination of the trustworthiness of the trustee, and second, the trusting action by actually demonstrating trust.

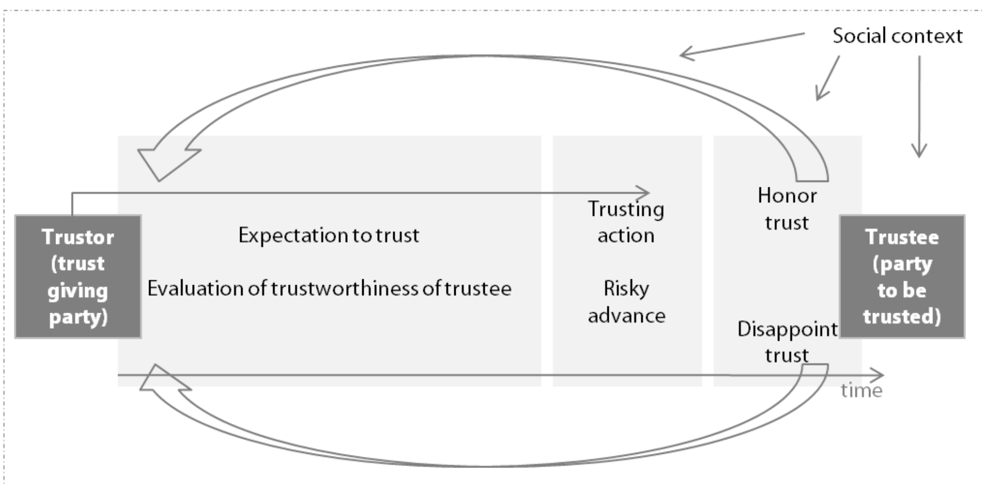

Figure 2. The Trust Relationship. This figure depicts trust as a relationship between the trustor and the trustee. This relationships starts with the examination of the trustee's trustworthiness by the trustor who establishes an expectation of trust. Trust is fulfilled when the risky advance is placed by the trustor. The trustee can reciprocate trust or disappoint the trustor. The relationship is embedded in and influenced by its social context (own illustration).

[21] Normally it refers to *another* subject, except regarding the intra-personal problem of self-confidence or self-efficacy.

Even though not all subjects can be unequivocally assigned to one of the following two categories, it is helpful to start by distinguishing *institutions* and *individuals* (Bosshardt (2001)).

The term "institution" refers to the rules of human interaction in a world of social interdependence. Thus, not only are organizations institutions, but also social conventions and procedures. Institutions serve to stabilize expectations by providing information and potential sanctions, and thus, help reduce complexity in human interaction (Ripperger (1998)).

A distinction is made between institutional and individual forms of trust. Trust in institutions refers to the smooth and frictionless functioning of institutions, whereas trust in individuals is related to the individuality of human agents and there freedom of choice. The English language actually provides two words to mark this distinction by speaking of *confidence in institutions* and *trust in individuals* (Bosshardt (2001)).

There are several limits to this classification and some further aspects need to be mentioned owing to their relevance for the focal topic of investor trust.

First, there are clear connections between these two forms of trust. One is that institutional factors have a great influence on the general behavior of people and society as a whole. Institutional elements influence general risk propensity and trust behavior strongly on an individual, organizational, and society level. Institutional factors form the environment in which trust originates (Rousseau et al. (1998)).

Second, individuals often play certain roles, which are themselves also forms of institutions. For example a medical doctor or the management of a company can be seen as individuals and also as performers of a social function. This results in a mix of institutional and individual trust (Bosshardt (2001)).

Third, institutional trust can be unilateral or bilateral. While trust in institutions is mainly unilateral, e.g. with respect to the economic or legal environment of a company[22], it may be also relational, as in for example trust between organizations. Bilateral forms of trust are referred to as *dyadic trust or relational trust* (Mayer et al. (1995)). Relational trust derives from the experience of interaction, and can be observed on both an inter-personal and inter-organizational level (Bierhoff (2008)).

Finally, a distinction may also be made between *personal and system trust.*

[22]Of course human beings have an influence on social rules but this is normally over a longer period of time.

System trust can be thought of as a form of institutional trust, and the term also has a specific meaning in sociology. While psychology focuses on individual trust as both a concept of personality and interaction, in sociology, trust is at the beginning treated as something personal and therefore limited. This limitation arises through the unpredictability of the actions of others in a social system. System trust moves beyond this limitation of personal trust by consciously allowing for uncertainty, for example, as a result of abstaining from control mechanisms. This serves to reduce complexity and opens up new opportunities for action within the system. While some complexity is reduced, new complexity is simultaneously created as new opportunities become available (Luhmann (2000)).

B.2. Uncertainty

Trust always entails diving into the unknown, no matter what form it takes. This basic element of uncertainty is reflected in all definitions.

Figure 3 relates the different forms of uncertainty introduced in Section II to various forms of trust as methods of handling uncertainty.

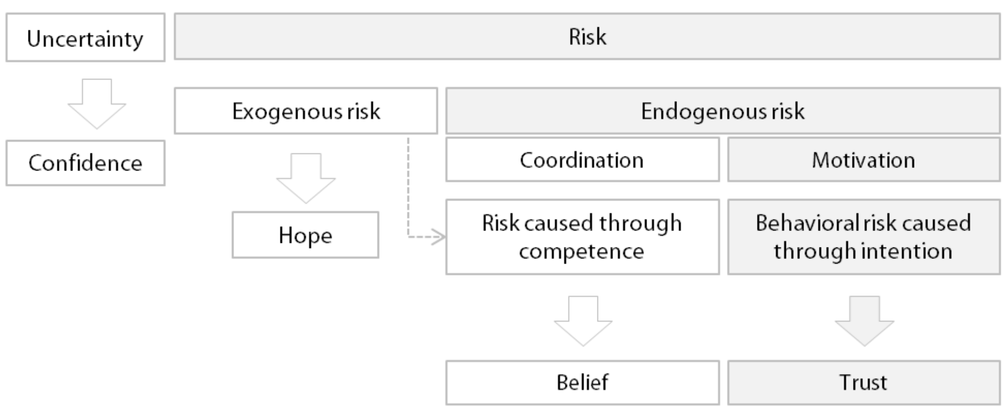

Figure 3. Forms of Uncertainty and Trust as Response. This figure shows the different forms of uncertainty and trust, narrowing down trust in the strictest sense to an opportunity to handle endogenous risk related to the intention of the reference subject, displayed in gray (Ripperger (1998), p.40).

As a matter of fact, one general answer to uncertainty in life is simply to have *confidence*. This is the general, positive attitude towards life mentioned earlier in Section III, A. While humans may be said to have confidence with respect to overall, objective uncertainty, i.e. with respect to things that are not under their control, the term trust is used to refer to a specific risky situation. Subjective risk regarding exogenous events, i.e. events which cannot be influenced directly, can be addressed in terms of *hope*. Trust can thus be seen as an alternative of action in situations of endogenous risk, when the choice of action of another player is uncertain and may influence one's own utility.

Just as endogenous risk can be broken down into problems of coordination and motivation, trust can also be further narrowed down to problems of competence and intention. Conflicting opinions exist concerning whether trust refers to both competence and intention or simply to intention. Here the moral aspect of trust is touched upon. Competence may be seen as a form of confidence, reliance or belief in the capability of another party. In contrast, trust in the strictest sense of the word, can be seen as a way of handling intentional uncertainty in a specific relationship.[23]

B.3. Willingness to Be Vulnerable

As mentioned above, trust can only arise if there is a potential for damage. Making a risky advance without knowing if such an action will be rewarded or abused creates vulnerability. Mayer et al. (1995) define trust as "[...] the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party" (p.712).

They emphasize two crucial things: The trusting party experiences vulnerability, i.e. being *conscious* of the fact to lose something significant or dear, and accepts this uncertainty *willingly*.

Mayer et al. (1995) also refer to relational trust and how it differs to confidence. Confidence and trust are both means of coping with situations entailing general uncertainty, i.e. both concepts "refer to expectations that may lead to disappointment. Luhmann argued that trust differs from confidence because it requires a previous engagement on a person's part, recognizing and accepting risk exists. [...] If you do not consider alternatives (every morning you leave the house without a weapon), you are in a situation of confidence. If you choose an action in preference to others in spite of the possibility of being disappointed by the action of others, you define the situation as one of trust." (Mayer et al.

[23] The distinction between uncertainty and risk used here is helpful in demarcating the different forms of trust. Unless otherwise stated the terms risk and uncertainty are used interchangeably in the following pages.

(1995), p.712, citing Luhmann (2000).)

Willingness with respect to trusting implies that actors are aware of the given uncertainty and do not shy away from it. This does not mean that the players expect bad behavior and are suspicious about being betrayed. Quite the opposite is the case. People are willing to trust others only if they expect cooperative behavior because trust is a positive attitude.

C. The Temporal Dimension of Trust

By definition, trust always refers to a future state which is uncertain, contingent, and not perfectly predictable (Bosshardt (2001)). Or in Luhmann's words: trust "anticipates the future" (Luhmann (2000), p.8). If one party demonstrates trust to another party, they anticipate the future, they pretend the future to be certain. This implies that trust is by definition prospective, see Figure 4.

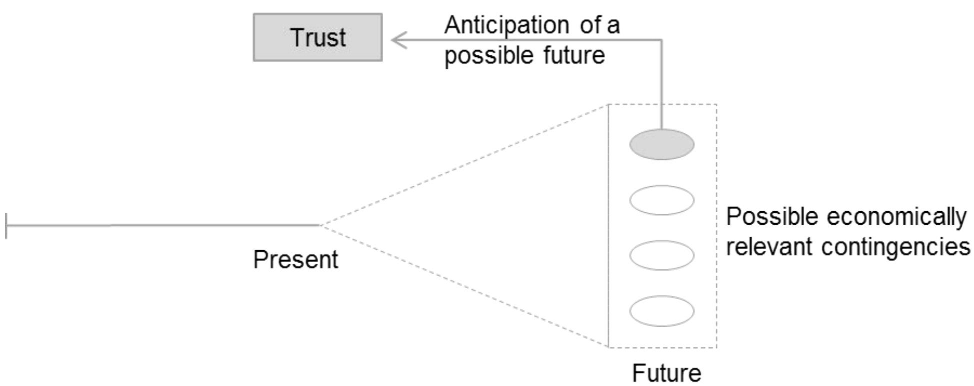

Figure 4. Temporal Dimension of Trust. This figure illustrates the temporal dimension of trust. Trust is prospective by definition. It anticipates the future without limiting the economically relevant and possible contingencies (Ripperger (1998), p.47).

Although trust is by definition prospective, the literature distinguishes *retrospective and prospective trust* (Bosshardt (2001)). Retrospective trust is based on directly or indirectly acquired information about the past, it is a part of knowledge in this sense, and therefore, a correlate for certainty (Bosshardt (2001)). In this context, the meaning of the concept "familiarity"[24] is worth looking at. Luhmann (2000) sees familiar worlds as those dominated by the past. It is relatively easy to live in a familiar, intimate environment since the past does not leave any possibilities open and complexity is thus reduced. Familiarity is formed out of regularity which creates certainty, a form of base

[24]Which in German is intriguingly called "Vertrautheit".

stability. Trust, on the other hand, always points towards the future, even if "past information is drawn over", brought into the present in order to attempt a determination of the future. Once personal experience is established, the information and experience of the past is "extrapolated" into the future, building on retrospective trust to reach into the future with prospective trust (Luhmann (2000) and Ripperger (1998)). The temporal dimension of trust becomes evident once trust is seen as a process originating within a social relationship (see Section IV). Retrospective trust can then be seen as a starting point for the process of trust (Bierhoff (2008) and Stegmaier (2008)).

D. Trust from an Economic Perspective

Within economics, the initial period of reluctance has been overcome and the topic of trust has established itself as thriving field of research. The last decade in particular has been witness of several major advances. There has been substantial progress in the measurement of trust using experimental tools and survey measures. Still, some partially justified concerns of economists with respect to trust do remain.

It is common sense that trust serves as a lubricant for the economic system. According to Arrow (1972), "virtually every commercial transaction has within itself an element of trust, certainly any transaction over a period of time" (p.24). Even though today trust is not just treated as background environment anymore, the exact role of trust is still not clear. Is it just an epiphenomenon of good institutions or does it play an independent causal role in shaping important aggregate economic outcomes (Fehr (2009))?

The comments in the following sub-section reflect the fact that trust is a relatively new and ongoing area of research within economics drawing on a variety of definitions and approaches. I first look at the implications of different behavioral assumptions when defining trust. I then describe the most prominent economic approaches to trust. I close with some remarks concerning the treatment of trust within an economic framework, both in economic terms and as an economic tool.

D.1. Trust and the Economic Behavioral Assumptions

Within the prevailing economic framework of the neoclassical school of thought there is neither room nor necessity to think about trust. Why?

The answer is largely related to neoclassical assumptions of complete and symmetric information and individual rationality. Trust always involves incomplete knowledge. If agents have complete and symmetric information and are perfectly able to process it, a situation of trust can never arise or would not make sense. Further, trust in the strictest sense may arise due to uncertainty regarding the motivation of the counterpart. However, perfect individual rationality implies that agents always choose the option with the largest expected outcome according to their preferences, but only as long as they do not harm other agents. Maliciousness is not included in such a framework.

This means that actually the concept of trust can only be dealt with in a framework that allows for imperfect and asymmetric information, bounded rationality, and opportunism and betrayal. New institutional and behavioral economics are thus areas of economic research that offer a possible theoretical framework for trust since they both allow for such aspects. Some approaches using rational choice theory also offer potential but these are not infrequently subject to criticism in the prevailing literature on trust.

D.2. Modeling Trust In Economics

Trust as a Principal-Agent Relationship

Ripperger (1998) models the decision to trust as a rational decision process between the trustor as the principal and the trustee as the agent (see Figure 5).[25]

Trustor and trustee follow a rational decision calculus as described below:

- The placing of trust by the trustor is based on:
  - the cost/utility calculus of the trustor
  - the preferences of the trustor
  - anticipated constraints with respect to the trustor's scope for action
    - which in turn depends on the risk associated with the action in question (perceived risk regarding the trustee), and
    - the subjective risk appetite of the trustee.

[25] Ripperger (1998) gives a good introduction to the principles of principal-agent theory on the pages 63–82. For basic contributions on the topic in general see among others Fama (1980), Fama and Jensen (1983a), Horsch et al. (2005), Jensen and Meckling (1976), Pratt and Zeckhauser (1985), Rees (1985a), Rees (1885b), and Ross (1973).

- Whether the trustee rewards the risky advance placed by the trustor is based on:
  - the cost/utility calculus of the trustee which is influenced by:
    * intrinsic incentives, and therefore by the preference structure of the trustee, and
    * extrinsic incentives in terms of reputation mechanisms which regulate the possibilities of cooperation through access to social capital.

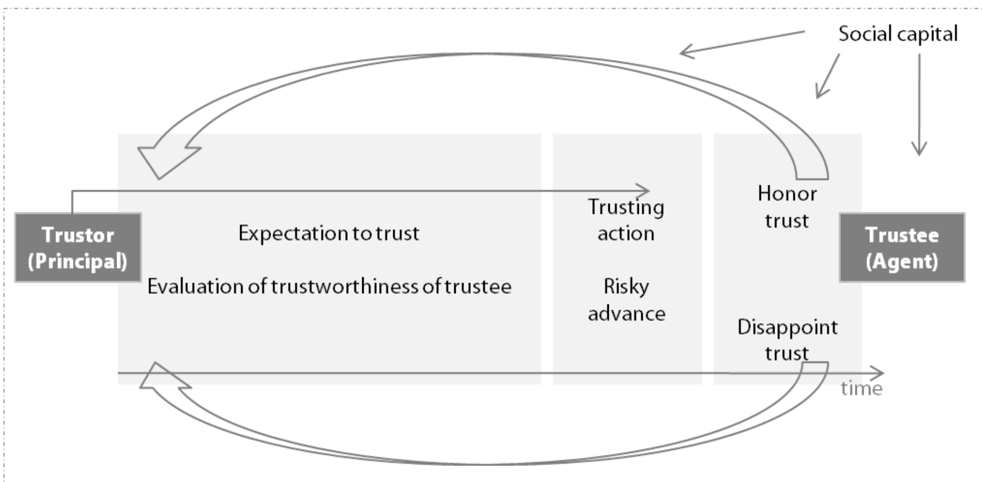

Figure 5. Trust as a Principal-Agent Relationship. This figure picks up the idea of Figure 2 of trust as a relationship. Here trust is illustrated as a principal-agent relationship between the trustor as the principal and the trustee as the agent (own illustration).

This principal-agent relationship can be modeled as an *implicit contract* between the trustor and the trustee which highlights the behavioral risk involved for the trustor in a situation of trust (see Figure 6).

Before performing the trusting action the potentially trusting party is confronted with an adverse selection problem when deciding on the trustworthiness of another agent—the potential trustee—because the trustee owns private information concerning her preferences and intentions of behavior, in sum, her motivation. In a screening process the trustor will try to identify agents with the characteristic of trustworthiness. Agents who would like to be trusted are interested in signaling trustworthiness.

After the trusting action is executed the principal faces hold-up risk because the risky advance is an irreversible investment and implies a form of one-sided

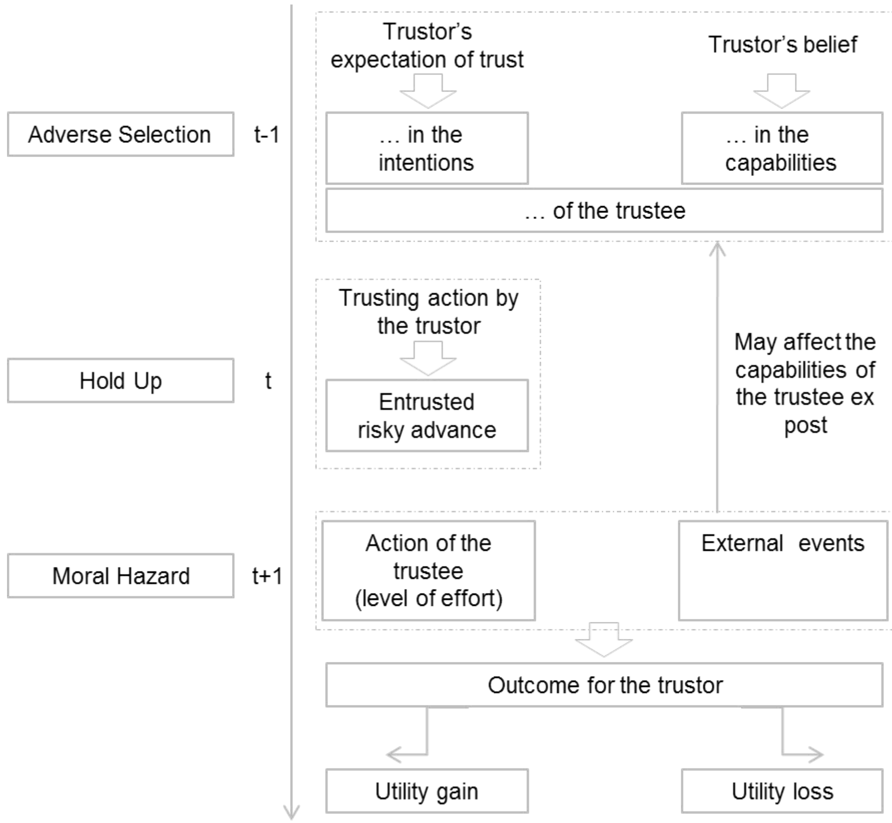

Figure 6. Behavioral Risk in the Trust Relationship. This figure describes the behavioral risk involved in a situation of trust between the trustor as the principal and the trustee as the agent before, when, and after the placement of trust (Ripperger (1998), p.76).

dependency. The hold-up risk increases, the more valuable and specific the risky advance is. At this point the trustee can choose between honoring or disappointing the trustor. Through the trustee's choice of action she can either deliver value—increase utility—or cause loss. Finally, another problem might arise, namely a situation of moral hazard, if the trustor is not able to distinguish between the level of trustee effort and non-controllable exogenous events.

The Trustor's Decision Calculus

One strand of economic literature defines trust as a decision under risk. This implies that the trustor assesses probabilities concerning the behavior of the other party and uses the resulting expectations as the basis for her decision: i.e. she estimates the trustworthiness of the trustee and the size of the potential profit/loss of the risky investment. Within this view the decision can be seen as gambling choice or a trusting choice problem.

Exponents of rational choice theory see trust as a *gambling choice*, thus, the same as a bet (Dasgupta (2000), Gambetta (2000), and Coleman (1990)). Trusting can be an acceptable option where transactions range over a period of time, i.e. if the own effort has to be performed before the other party delivers her effort. The transaction is seen as realized once the risky advance is actually placed. Whether the expected trusting action is actually performed depends on the expected profit of the risky advance compared to the expected loss, given the expected behavior of the trustee. The expectation of the trustor is thus fully determined by the motivation of the trustee and the knowledge of the trustor. The better informed the trustor, the clearer her decision to trust. The search for information follows a rational calculus as well. The trustor looks for information up to the point at which the marginal cost of the information search does not exceed the related marginal gain. Further, structural independence is assumed, i.e. every agent's decision to act is independent of the actions of others (Weibel (2002)).

Where the decision calculus of the trustor is seen as a *trusting choice* instead of a gambling choice the focus shifts to the trustworthiness of the trustee and her willingness to reciprocate (Deutsch (1960) and Luhmann (2000)). According to Deutsch (1960), to "[...] trust another person to produce a beneficial event X (or to suspect another person will produce a harmful event Y) an individual must have the confidence that the other individual has the ability and the intention to produce it" (p.123). The trustor is in a situation where she can either gain or lose through interaction. Whether she gains or loses depends on the trustee. The resulting expectation concerns the competence and intention of the trustee but focuses in particular on the motivational aspect of the trustee in reciprocating trust. The more intrinsically motivated the trustee seems to be, the stronger the likelihood that the trustor will be willing to advance trust, irrespective of the specific situation.

There are two main criticisms put forward by many trust researchers regarding the rational choice approach to the phenomenon of trust (Weibel (2002)). The first regards the idea of seeing trust as vulnerability. According to Deutsch (1960) one can only speak of a situation of trust when the possible loss is greater than the potential realizable gain. The other focuses on the trustworthiness of the trustee. In a bet estimated trustworthiness is simply not relevant.

Even though Institutional Economics allows for behavioral uncertainty the approach still does not fully capture the essence of trust since the uncertainty aspect is defined away from the outset. It is known ex-ante which strategies are optimal for everyone, how the agents will behave, and the principal simply anticipates the optimal behavior of the agents.

The Trustee's Decision Calculus

Although most of the trust research focuses on the decision calculus of the trustor, the decision calculus of the trustee is crucial as well since this influences the initiation of trust by the trustor (Ripperger (1998)). The trustee's decision calculus is given by her preferences and external constraints. Therefore, it makes a difference for the trustor whether she expects rational, reciprocal or even altruistic preferences of the trustee. In the rational choice approach, the trustee computes not only the current profit of a betrayal but also the potential loss of betrayal resulting from any future relationships with the trustee or others. Coleman (1990) concludes that the trustee will more likely reciprocate favorably the longer the relationship is expected to last, the greater the gain of a longer relationship, and the more comprehensive the communication between the agents is (Weibel (2002)).

Trust as a Tendency to Cooperate

Another way economists look at trust is by seeing it as a tendency to cooperate. There are again two different views and areas of research regarding trust as cooperation.

The first view follows formal game theory and tries to specify in which situations cooperation may be the optimal choice for rational agents (Dasgupta (2000), Kreps (1996), and Williamson (1993)). In modern trust literature cooperation is not necessarily equated with trust. Cooperation can arise in the absence of trust. It may but it does not have to be based on trust. In games of pure cooperation individual trust does not refer to the good conduct of the other players but to their rationality and to prevailing conventions and norms (Bosshardt (2001)). Conflict games such as the prisoners' dilemma are used to show that "trust" is rational because it can be shown that cooperation yields a higher payoff for both players than if one betrays (Axelrod (1984)). The critique is similar to that above in the classical case of cooperation. The trustor does not analyze the trustworthiness of the other agent and does not have a trusting expectation about the intentions or behavior of the other party (Ripperger (1998)). Rather, the trustor decides to place trust—to cooperate—if the situation fulfills certain conditions. She knows that where there is potential for further interaction or where third parties could be informed of the defection, offering trust is acceptable. Since all players "know" about each others' strategies and their interdependencies, the uncertainty involved becomes analyzable, the future can be anticipated. Given realistic conditions of iteration, i.e. the possibility of sanctioning and social embeddedness, trust reduces to reputation (Hubig (2007)).[26]

The second view on trust as cooperation encapsulates what is today the main area of economic research on trust. It refers to the empirical documentation of cooperation between players who only rarely interact with each other, also referred to as trust between strangers.[27] This concept of the so-called "pure" form of trust is contrary to many trust researchers' point of view who claim that trust can only originate within a relational setting over time and that "blind" trust cannot exist (Camerer (2003) and Lewicki et al. (2006)).

This form of trust includes interaction at a level of individuals, just as social aggregates which produce socially efficient outcomes (see among others Coleman (1990), Fukuyama (1996), Gambetta (2000), La Porta et al. (1996), and Putman (1993)).[28] The general attitude of the people of a society is supposed to shape the way cooperation works and therefore influences economic development. Thus trust between strangers becomes ever more important, the greater and more complex systems and their players become, and the higher the frequency and scope of interaction. This is also said to have a strong influence on the performance of large organizations (Fukuyama (1996) and La Porta et al. (1996)).

There have been great advances in this area owing to the substantial progress made in measuring trust empirically with experimental tools—e.g. the so-called "trust game"[29]—and with survey measures. Still, the causal role of trust remains

[26] Game theory shows that repeated interaction can lead to cooperation. Moreover the social environment matters if communication is possible since reputation is built up and it works as an incentive and sanction mechanism. I will come back to the role of reputation for trust in Section VI.

[27] One attempt of measurement, see Camerer (2003), lies in defining the slippery concept in a game, perhaps asking "Would you lend money to somebody who does not have to pay you back, but might feel morally obliged to do so? If you would, you trust her. If she pays you back, she is trustworthy." (p.3.)

[28] Although being originally a sociological concept, the topic of *social capital* has gained significant attention also from an economic perspective over the last years, in particular regarding the understanding of the creation and distribution of social trust and the effect on economic development. See for example for an overview Franzen and Freitag (2007) and Marková and Gillespie (2008).

[29] Engelmann (2010) explains the trust game originally introduced by Berg et al. (1995) as

an area of great dispute, mainly because the measurement of "pure" trust is so difficult (Fehr (2009)).[30]

There is indeed evidence that trust affects important economic variables such as GDP growth, inflation, or the trade volume between countries: High trust societies, that is societies with a large share of trusting people, are negatively correlated with inflation rates and positively with GDP growth rate across countries (La Porta et al. (1996), Knack and Keefer (1997), and Zak and Knack (2001)). Higher bilateral trust between countries is associated with more trade (Guiso et al. (2006) and (2009)). Further, very interesting work, especially regarding the topic of the present essay, has been done by Guiso et al. (2004), Guiso et al. (2008), and Guiso (2010) on the interrelationship of trust and financial development. I will look at this in detail in Section V.

A Working Definition of Trust

After having described the various economic approaches to trust, I now close with the definition given by Fehr (2009) who defines trust in the following way: "An individual (let's call her the trustor or investor) trusts if she voluntarily places resources at the disposal of another party (the trustee) without any legal commitment from the latter. In addition, the act of trust is associated with an expectation that the act will pay off in terms of the investor's goals. In particular, if the trustee is trustworthy the investor is better off than if trust were not placed, whereas if the trustee is not trustworthy the investor is worse off than if trust were not placed." (p.3.)

This definition coincides with the characteristics of a situation of trust discussed in Section III concerning the existence of a reference subject, uncertainty, and vulnerability. It sees trust as positive expectation and voluntary act. Additionally, it specifies the decision calculus of the trustor as a "trusting choice".

follows: "In a typical version of the trust game, [...], two anonymous players called the "investor" and "trustee" interact by sequentially exchanging monetary amounts as follows: The investor is allocated a certain amount of money by the experimenter, say 10 MU, and is asked to send any amount from her endowment to the trustee. Known to both participants, the amount transferred by the investor is tripled by the experimenter. The trustee's role is to decide how to share her endowment with the investor, that is, how much money to send back. The amount sent by the investor is taken to reflect trust-taking, as she voluntarily makes herself vulnerable by placing her resources at the disposal of the trustee. Her motive for doing so is that the social risk she took could increase her financial wellbeing, if her trust is reciprocated. The amount returned by the trustee, then, is a measure of prosociality and trustworthiness." (p.230.)

[30] I will deal with the various challenges of the measurement of trust a little further in Section VII, A.1.

D.3. Reservations Concerning an Economic Treatment of Trust

Although there are several theoretical tools available to integrate trust as an important social fact into economic frameworks considerable reluctance still prevails.

Reasons for Reluctance

One reason is the general calculative approach of economics which seems to be a fundamental contradiction given the nature of a phenomenon like trust (Ripperger (1998) and Williamson (1993)). According to Williamson (1993), trust is "reserved for very special relations between family, friends, and lovers" (p.484). The rationality orientation of economics compared to other social sciences is said to be incompatible with trust. Trust "[...] would be seriously degraded if a calculative orientation were "permitted"" (p.486).

Another open and valid issue is the phenomenon's "softness" and its fuzziness which makes a direct measurement of trust difficult, if not impossible. Some see trust as a pre-economic construct which means that it refers to qualitative aspects that have cognitive and emotional effects which might in turn influence quantitative economic measures.[31] Not all economists think that it is reasonable to analyze trust because only part of the variance of the economically relevant category may be explained (Kenning and Blut (2006) and Williamson (1993)).

As trust is clearly relevant for social exchange, one could easily dismiss the problem by simply asserting that economic theory is obviously too abstract and unrealistic. However, when one returns to the origin of economic theory it becomes clearer why trust, just as other moral issues, is not included in the models. The genius idea and goal was namely to *objectify* economic exchange and create an instrument of social control, enhancing welfare for the society as a whole.

Trust as a Topic of Ethics

Economics developed out of political economics and thus out of moral philosophy about a hundred years ago.[32] The real driver behind the economic thought was the changing status of the bourgeoisie and the nobility. The knightly virtues of the nobility were gradually transformed into civil codes of ethics: knightly competition was now mutual gain through cooperative behavior, and courage

[31] An example would be customer loyalty that might have an influence on turnover.

[32] Aristotle was the first to talk about it as an own discipline but saw ethics as having a primacy since it determined what is good or bad and therefore defined the borders of economic activity.

and dignity became agreement and acknowledgment of contractual obligations, respectability, and trustworthiness. The drafting of a contract demanded accountability from both sides and also offered mutual advantage.

Supporters of civil ethics were convinced that moral and religious rules were not strong enough to control the destructive passions of the human being. Such thoughts reached their peak during the Age of Enlightenment. The passions referred to were avarice, greeds, and lucre. Adam Smith summarized them under the terms "advantage" or "self-interest" and declared them to be the origin of economic action. Self-interest, however, also required a certain degree of calculation and caution.

The newly discovered principle of self-interest provided a promising basis for the functioning of society. The central advantage of a society guided by self-interest is the predictability of human behavior. Individuals are no longer completely exposed to the arbitrariness and randomness in the passions of their fellow human beings. Behavior becomes more transparent, more calculable, and more predictable. This is seen as an advantage not only for one person but for everyone, i.e. for society as a whole. Everyone has the same rights and morality is no longer individually contingent. The new declared morality was social by definition as it is only activated within a relationship (Ripperger (1998)).

From a classical economics' point of view, moral science—especially regarding economic activities—was now regarded as unnecessary. In a world of perfect individual rationality everyone acts by maximizing their utility but *not* at the expense of anyone else. Since trust is a moral problem arising only if there is uncertainty pertaining to the moral qualities of another person, trust will not be treated in economics.

Even though classical economists such as Adam Smith did not explicitly address trust, it was believed that prevailing institutions, i.e. legal, commercial, and behavioral norms all served to channel the self-interested behavior in the right direction. Furthermore, within his analysis of the division of labor, Smith assumed a certain form of trust between the exchange partners, and in "The Theory of Moral Sentiments" he said that humans want to live according to certain rules of morality and that they naturally aspire to express love, gratitude, and admiration. For Smith it was clear that all human individuals are part of a system of social norms. The isolation of economic theory from other social sciences only began to gain force with the subsequent rise of neoclassical economics (Bosshardt (2001), citing Smith (1976)).

Leaving Room for Reason and Emotion

To resume, the original idea of classical economics was actually a good one but Ripperger (1998) points out that the strict separation of the different social disciplines creates a "schizophrenic view on the idea of man" (p.240). Ethics and economics are not seen as two sides of the same coin, the individual is not seen as one human being having one mind. The result is a dualistic comprehension of the human actor and the need to distinguish calculus and emotion, even at the level of trust. As will be discussed further below, the interrelationship and interaction of reason and emotion is a tight one and depends strongly on the context and the precise situation. Or as Volkart (2008a) puts it: "Concluding, in general and particularly for the management of a company, there is a need to always leave enough room for the interplay between reason and intuition. [...] And the generation of trust, which is indispensable in the functioning of the markets, cannot arise through reason alone, but nearly always requires the addition of intuition." (p.736.)[33]

E. Relevance of Trust and Trustworthiness in Doing Business

Trust is said to be one of the key variables in the relationship between an effective management of a firm and its stakeholders (Bauer et al. (2006)). As a social lubricant it is said to exert a crucial influence in such areas as communication, cooperation, coordination, and conflict management, and through these channels impact firm performance.[34]

According to Olsen (2008) trust has an extrinsic and an intrinsic value. The primary *extrinsic value* of trust lies in its ability to reduce transaction costs. It serves as a complement to legal contracts, where future contingencies are not identifiable and malfeasance cannot be separated from bad luck. In such cases trust allows for agreement and cooperation. The primary *intrinsic value* lies in the reduction of suspicion and animosity, which once again enables more cooperative behavior and rapid adaptation to environmental uncertainty.

[33]Translated from original German: "Als Fazit ergibt sich generell und insbesondere für die Unternehmensführung die Forderung, dem Zusammenspiel von Verstand und Intuition stets ausreichend Raum zu geben. [...] Und die für das Funktionieren von Märkten unentbehrliche Vertrauensbildung kann oft nicht nur aus dem Verstand heraus erfolgen, sondern erfordert zumeist auch Intuition."

[34]Some of the numerous empirical studies are provided by Bstieler (2006), Davis et al. (2000), Dirks and Ferrin (2001), Dyer and Chu (2003), Kale et al. (2000), Tsai (2000), and Zand (1972). Further empirical studies regarding the interrelationship of trust and information and communication will be provided in Section VI.

Wilson and Kennedy (1999) argue that trustworthiness is a *productive, economic asset*, similar to information or knowledge. As all stakeholders have certain beliefs and values associated with a firm, the repeated observation of these characteristics creates a trustworthy reputation for a firm. The perceived trustworthiness then has a positive impact on business flexibility, and it saves managerial time and monitoring costs. Despite taking time and money to evolve and maintain, trustworthiness appreciates in value through experience.

Barney and Hansen (1994) come to the conclusion that trustworthiness may be a *source of competitive advantage* when reacting to the variance of trustworthiness of exchange partners. In particular, the firm culture, and through that the reputation of the firm provide opportunities for sustained competitive advantage since they are very strong, socially unique and highly complex, and thus relatively immune to imitation and rapid diffusion by competitors. This point of view demonstrates how important a firm's *culture and reputation* are. These are largely determined by the values and beliefs of past and present owners, of employees, but especially those of the management.

F. Summary Section III

The goal of Section III was to introduce some of the multiple facets of the trust phenomenon.

Trust always relates to another subject. This may be individuals, institutions, or a whole system. Depending on the reference subject it may be either unilateral or dyadic. In the case of relational trust, trust can be defined as a relationship between a trustor, the trust giving party, and a trustee, the party to be trusted, which is embedded in and influenced by its social context.

Trust is needed when a situation entails some element of uncertainty. In general, people may respond to the uncertainties of life by assuming an attitude of confidence. Trust, however, is always related to a specific situation and to particular forms of risk arising from the uncertainty generated by the choice of others and its impact on the trustor. This uncertainty may follow from ignorance concerning the competence of the trustee, or from the lack of knowledge concerning her intention. Trust in the strictest sense is associated only with the latter uncertainty regarding trustee motivation and the potential negative consequences for the trustor. This trustor vulnerability is fundamental in any situation of trust.

Trust is both an expectation and an action performed by the trustor. The expectation is related to the positive beliefs concerning the trustworthiness of a potential trustee. However, only after a risky advance has been made, is the trust act complete, since only then is the vulnerability of the trustor exposed.

Trust has a temporal dimension. It is prospective in that it always concerns an unpredictable future, and also anticipative in that no specific constraints are set (as in a contract) with respect to possible contingencies. Trust may also be retrospective when referring to information acquired about the past.

From an economic perspective the relationship between trustor and trustee may be seen as a principal-agent relationship where the decision to place trust follows a rational cost/utility calculus. If trust is seen as an implicit contract between a trustor and a trustee, the behavioral risk involved becomes a problem of adverse selection in that before the placement of the risky advance the trustee owns private information about her trustworthiness. Once the trusting action is performed, the principal faces a hold-up risk as the risky advance is a one-sided irreversible investment, a situation which may be abused by the trustee. Finally, moral hazard may prevail since the trustor might not be able to distinguish between the reciprocating effort of the trustee and the impact of exogenous events.

Rational choice theory sees trusting as a gambling choice, similar to a bet. In contrast, standard trust literature emphasizes trust as a trusting choice. Such literature focuses on aspects of trustor vulnerability, i.e. potential loss is supposed to be greater than potential gain, and on the aspect of trustworthiness. Some economists define trust in terms of cooperation as in formal game theory. However, as cooperation may occur in the absence of trust, this approach is not altogether convincing.

The greatest part of the most recent economic research on trust is actually dedicated to empirical documentation of the level of trust concerning cooperation between strangers. This form of trust is also called generalized trust or the disposition to trust when referring to the general trust attitude of an individual. In the case of a social system as a whole, it is called social trust.

Economists have approached the subject of trust with considerable reserve, as problems regarding its true nature and measurement abound. Where the moral qualities of individuals were concerned, ethical rather than economic analysis was seen as being more appropriate. However, the newer schools of economic thought operate with a broader concept of human action, and now acknowledge trust as being highly relevant for both social and economic analysis.

IV. A Procedural View on Trust

The temporal nature of trust mentioned in Section III, C already indicates a procedural view on the topic. There are two facets that I would like to point out: one is the process of being able to perform the initial trusting action, while the other is the development of trust within a relationship setting. Looking at trust dynamically the initial trusting action is of crucial importance, as it is the basis for further interaction, but the perception of trustworthiness and the level of trust are capable of adaptation over time and through interaction.

In standard economics these procedural qualities of trust are missing as there is no adaptation of beliefs and preference levels in response to the outcomes of choices. The assumption of structural independence, i.e. every agent's decision to act is independent of others' actions, leaves no room for modeling reciprocal effects (Weibel (2002)).

The trust process starts when the potentially trusting agent evaluates the reference subjects, i.e. the potential agents to be trusted, and builds up an expectation of trust. At any particular moment trust can be thought of as the aggregation of the perception of certain factors regarding the reference subject which then finally leads to the trusting action. This first sub-process is embedded in and strongly influenced by a specific context, as well as by psychological and sociological factors. The information available is processed, whereby most of the various mechanisms used in information processing operate subconsciously and tend to follow an optimistic pattern (Bierhoff (2008)).[35] After this initial act of trust it is up to the trustee to either reciprocate positively or to disappoint the trustor (as has been shown in Figure 2 and 5, Section III, B.1 and D.2.). When the relationship, in whatever form, continues, the dynamic nature of trust comes into play. Within a relationship trust changes over time through experience. Within the ebb and flow of a relationship trust is continuously re-evaluated by the receiving and processing of new information (Rousseau et al. (1998)).

A. Establishment of a Trustworthy Expectation

As mentioned in the introduction, the starting point of the process of trust can be thought of as the result of perceiving different factors concerning the reference

[35] According to Hartmann (2008) attitudes in general are said not to be consciously brought about but to *result*.

subject, the so-called *antecedents* of trust. On the basis of such antecedents, an overall opinion or attitude with respect to the trustworthiness of the opposing party is formed, and the expectation of trust emerges.

The antecedent factors needed for the emergence of trust have been widely discussed.[36] The three most important components which describe a large portion of trustworthiness are *ability*, *benevolence* and *integrity* (Mayer et al. (1995)), or in the words of Rawlins (2008): "Trust is one party's willingness to be vulnerable to another party based on the confidence that the latter party is competent and dependable, has integrity and acts with goodwill." (p.5.)

A.1. Considering the Context

Even though the exact process of trust is unknown, people seem to start with some baseline level predicated upon previous life experience and then adjust it to the unique features of the situation (Olsen (2008)).[37] The level of trust deriving from the perceptions of ability, benevolence, and integrity of the potential trustee and from the natural propensity of the trustor may be constant[38], but the actual behavioral manifestation of trust will definitely depend on contextual factors, for example, on the perceived level of risk or the availability of alternatives (Mayer et al. (1995)). "In sum, the trustor perception and interpretation of the context of the relationship will affect both the need for trust and the evaluation of trustworthiness. Changes in such factors as the political climate and the perceived volition of the trustee in the situation can cause a reevaluation of trustworthiness." (Mayer et al. (1995), p.727.)

Trust lies on a continuum between *knowledge* and *belief*. This allows for an area of conflict between the basic attitude towards trust and the specific expectation regarding the particular reference subject. The proportion of rational and emotional elements clearly depends on the context and forms specific trust (Kenning and Blut (2006)). Both elements are always existent, have a complementary effect and depending on the reference subject, the content of the relationship, and the resulting expectations, produce different forms of trust. In the context of anonymous relationships the actors involved often have to *decide* to trust, whereas in intimate relationships in which trust appears to be inherent, trust seems to be naturally existent, is "habitus" (Hartmann (2008)). The

[36]For a good overview of various studies see Mayer et al. (1995) p.718.
[37]This refers again to the aspect and influence of familiarity.
[38]As to Mayer et al. (1995) they might also be context specifically influenced.

co-existence of the two elements clearly contradicts the view that trust is purely an emotional issue.

A.2. Cognitive and Emotional Elements of Trust

There is a lively ongoing debate concerning whether trust may be viewed as emotional or cognitive.[39] In the older literature in particular, cognitive processes are seen to be the basis of every trust process in which knowledge plays an important role. This knowledge is based on experience, depends on the context, and is up to a certain point always incomplete (Bosshardt (2001)). *Cognitive trust* gains in strength through repeated interaction. It is very strong, suppresses other forms of trust, and is given prominence in economic theory (Kenning and Blut (2006)). The other basis of trust takes the form of affective trust. This refers to the emotional connection between the parties. This *affective trust* results from an individual's specific emotional experience. It is not the same as generalized trust, although it is very much influenced by it, and it is not easily manipulable (Kenning and Blut (2006)).

According to the latest psychological and neuroscience research human decision making is generally best understood as a synchronous dualistic process, an entanglement of affective and logical influences, as "cognition in an affective wrapping" (Olsen (2008), p.2191). From a neuroscience perspective emotion is not seen as the antithesis of rationality but rather as something which assists reasoning. It takes account of the fact that most of our thinking takes place outside of our conscious awareness and that emotion influences our thinking very subtly.

As stated by Olsen (2008) from an evolutionary perspective there are two separate but interrelated processes in human decision making:

[39] As mentioned earlier, a precondition for a trusting relationship to arise is freedom of choice for all parties. There is the freedom to offer a risky advance and the freedom to disappoint expectations (Bosshardt (2001) and Luhmann (2000)). The option to disappoint is not only a question of complexity, of controllability, and of the ability to assess factors of trustworthiness. This freedom is rather *normatively* intended. To call somebody trustworthy means to acknowledge that it is someone that can be trusted. The cognitive awareness of trust does not contradict this normative desire because the cognitive awareness of potential damage is also a constitutive dimension of trust. And as trust entails the possibility to be disappointed it is clear and important, that the act of placing trust requires careful examination (Hartmann (2008)). In this sense "blind trust" does not exist. If complete knowledge were available, trust would not be needed. If there was no knowledge at all, a more appropriate term would be belief or faith (Bosshardt (2001)).

- The oldest process is the "experiential or associative process". It is reproductive, retrieves memories of similar past events in processing information, and encodes information from concrete examples, images, and narratives. It is rather holistic, context sensitive, and emotionally driven. Decisions must "feel correct" as well as "look correct". Feeling is always a key element in any decision because it supplies the trigger to action. When situations are very complex and information is incomplete, ambiguous or contradictory, the associative system involving feelings may be quicker than a rational system since it uses heuristics (rules of thumb).

- The other decision process is the rational or rule based process. It uses symbolically represented knowledge processing. Information is evaluated and integrated using formal logic. It requires more effort and is more time consuming but it yields more precise solutions when situations are not very complex.

Applied to the context of trust, it seems that there needs to be a minimum level of cognitive trust for affective trust to take hold. Olsen (2008) summarizes the current research regarding decision makers: cognitive trust seems to be primarily related to the perceived competence and reliability of the provider, and to situations where the hazard of being evaluated is more familiar to the trustor. Competence is demonstrated by credentials, command over information, experience, and past performance.

People tend to rely on affective trust more heavily when the decision is complex and hard to judge, when time pressure is great, when the trustor perceives herself as being in an inferior social position, or when the information gap between the trustor and trusted party is large. Affective trust appears to be a function of the care demonstrated by the trustee and the degree to which she has a personal value system similar or apparently similar to that of the trustor. Care is usually seen to be a function of fairness, compassion, and integrity.

Frowe (2005) gives an example of the interaction of cognitive and affective elements in professional to client relationships. Professionals see trust as a function of information and judgment. Judgment, as the affective element, involves the use of experientially learned "discretionary powers" by the professional, while trust principally concerns the freedom of the professional to employ tacit or non-learnable skills in the interest of the client.[40] The affective element appears to

[40] See also Polanyi (1966) who coined the term "tacit knowledge".

garner greater weight in situations where the trustor feels less knowledgeable.

Figure 7 illustrates the process of trust. At the very beginning is the establishment of an expectation of trustworthiness by evaluating factors such as competence, integrity, and goodwill, which is also influenced by the trustor's general propensity to trust. The actual trusting action will further depend on the characteristics of the specific situation. This aspect is referred to as the perceived risk of the situation and will additionally influence the final outcome: the trusting action. Trust in this sense entails taking risk within a relationship (Mayer et al. (1995)).

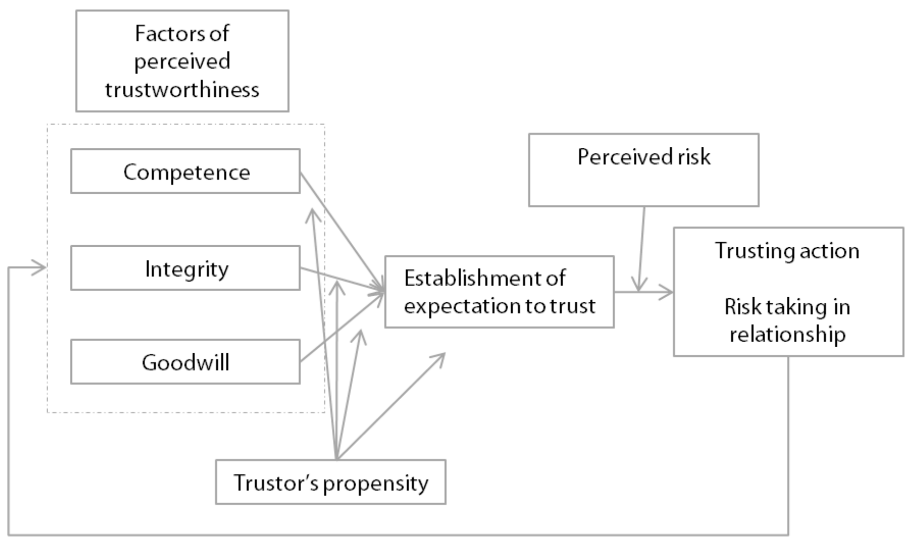

Figure 7. Process of Trust. This figure shows the process of trust which starts with the establishment of an expectation of trustworthiness through the assessment of certain factors and the general propensity to trust. The actual trusting action depends further on the perception of the risk of the situation (own illustration, input taken from Mayer et al. (1995) and Rawlins (2008)).

The role of perceived risk in such a context remains contentious and is still not fully understood.

B. Trust and the Role of Perceived Risk

The presence of risk has been defined as a necessary condition for the occurrence of trust. In this sense it seems plausible to see trusting as a special case of risk taking, as the trustor willingly accepts any residual risk remaining after a careful assessment of the trustee's intentions, abilities, and motives (Eckel and Wilson (2004), Johnson-George and Swap (1982), and Molm et al. (2000)).

According to Olsen (2008) and Ryan and Buchholz (2001), trust is an attribute or antecedent of perceived risk, to be imagined in a fashion similar to that shown in Figure 7. These authors see perceived risk as the flip-side of situational trust, i.e. the combination of the perception of the initial specific situation and the general trust attitude.[41]

Given that trust is a special case of risk taking, the question is what influences the willingness to bear the risk involved? While it appears sensible to relate it to the trustor's risk disposition and preferences, there is still no final consensus on this facet of trust.

For Ben-Ner and Putterman (2001) the willingness to bear risk is determined by the information the trustor has on the trustee (with respect to her trustworthiness), the trustor's former experience with trustworthiness in other transactions, and the trustor's preferences and disposition.

Following Eckel and Wilson (2004) agents do not perceive trust decisions to be risky gambles. They state: "It appears that when people are uncertain about the trustworthiness of their counterpart, subjects make inference about reliability from all information about the counterpart that is available to them, conditioning their decision to trust on this information. [...] People pride themselves on their ability to "read" others and make a decision about whether someone is trustworthy." (p.464.) Hence, trusting seems rather to be perceived as a problem of judgment (Frowe (2005) and Eckel and Wilson (2004)).

According to recent psychological research (Ben-Ner and Halldorsson (2010)) risk attitudes are not related to trusting. Kanagaretnam et al. (2009) also find that risk attitudes do not significantly account for the variation in trusting behavior except in one case where social value orientation is neutral.

As to neurobiological and behavioral research, trust seems to be shaped by risk preferences, social preferences, and beliefs about others' trustworthiness simultaneously (Fehr (2009))[42]. Experimental studies show that people seem to differentiate between different *sources* of risk, hence whether it is related to the uncertain behavior of the trustee or to random mechanisms. This distinction between social and asocial risks seems to be encoded in our genes. In particular, Fehr (2009) refers to the evidence and influence on trust of so-called "betrayal aversion". Betrayal aversion basically means that "people are more willing to take risk when facing a given probability of bad luck than to trust when facing an

[41] The procedural view of Olsen (2008) and Ryan and Buchholz (2001) will be resumed in Section V, B.2.

[42] Fehr (2009) provides an excellent overview regarding the latest research of neurobiological and behavioral research on trust.

identical probability of being cheated" (Fehr (2009), p.2).[43] Risk aversion and betrayal aversion are inversely related to trust, but the relationship to betrayal aversion is more distinct. In contrast, low sociability is associated with low trust (Fehr (2009) refers to research by Bohnet and Zeckhauser (2004), Bohnet et al. (2008), Kosfeld et al. (2005), and Naef et al. (2009)).

As risk is inherently related to investing, I will take up the discussion on the relationship of risk and trust in Section V.

C. Changing Levels and Forms of Trust

The two previous sections focused on the trust process in the initiation of trust. Its dynamic nature, however, becomes particularly clear in a relational setting. In a relationship the trust process is a flow of trust giving and trust honoring or disappointing, in a constant feedback loop. The individual experience of interaction serves as the basis for drawing conclusions about the credibility and reliability of the potential trustee. Thereafter, the principle of reciprocity follows. It is a constructive process between the processes of opening up and trusting of which both are contingent and correlated. According to Mayer et al. (1995) the outcomes of trust—i.e. the risk taking behavior—will lead to an update of those factors that influence the perception of trustee trustworthiness and the level of trust.

It has further been shown empirically that a strong willingness to open up by the trustor is associated with a high level of trust (Bierhoff (2008)). The process of trust can only be started by putting oneself at risk. One can only see if trust is warranted by exposing oneself to the possibility of abuse. At this point the ethical element of trust comes in, since the trustor shall respect the trustee's possibility to elude herself out of the situation (Stegmaier (2008)). If the trustee honors the counterpart's leap of faith, mutual trust originates as the ideal solution to a problem involving double contingency (Luhmann (2000)).

Generally, trust is supposed to increase over time. In this respect it is thus interesting to think about situations entailing high initial trust levels (McKnight et al. (1988) and Lewicki et al. (2006)). Meyerson et al. (1996) coined the term

[43] According to Fehr (2009) the "[...] existence of betrayal aversion is likely to be very important for institutional design questions because some of the most important risks that people face in their economic activities are socially constituted, such as the risk of being cheated by the trading partner or the risk of expropriation by politicians or corrupt civil servants. Thus, the existence of betrayal aversion is likely to be a potent inhibitor of trade and economic activity which renders the design and implementation of efficient legal enforcement institution all the more important." (p.12.)

swift trust. This relates to situations that are complex, of limited history, and thus offering little time in which to evaluate past performance. Common examples in business are so-called temporary systems where groups of experts may be assigned to fulfill a complex task in a limited amount of time. The presence of a reputable "coordinator" aids trust formation among group participants.[44] Harrison et al. (1997) find evidence for such swift trust in situations of informal investment decision-making processes.[45]

C.1. Forms of a Trust Relationship

Barney and Hansen (1994) distinguish three forms of trust relationships in business transactions:

- Weak form of trust: There is limited opportunity for the exchange partner to take advantage of the counterpart.
- Semi-strong form of trust: Formal and informal regulatory principles exist to facilitate exchange, as potential opportunism exists.
- Strong form of trust: All parties know that opportunistic behavior would violate a commonly shared standard of behavior.

In the presence of the weak form of trust, trustworthiness is easy to achieve and exchange partners will receive all benefits without substantial governance or other costs. The quality of goods can easily be evaluated and there are no investments that are very specific. The markets for crude oil or soy beans are examples of weak forms of trust as quality assessment is relatively easy and traders are already highly competent. The semi-strong form of trust is the type of trust most common in economic models of exchange. Regulatory mechanisms are in place so that opportunistic behavior costs more than it benefits. But the creation and implementation of regulatory standards is of course not free of charge. In the case of the third form of trust, strong trust, there is significant potential for vulnerability. Regulatory norms may be in place or not. Here the focus lies on the potential violation of common values, principles, and standards initialized by the exchange parties.

[44] I will come back to the importance of such reference points within networks in financial markets later on.

[45] I will take up this concept later on with respect to the process of the development of investor trust.

Weak and semi-strong forms of trust are endogenous, whereas this third form is clearly exogenous to a particular exchange structure. While for individuals the strong form of trust is not uncommon, with respect to the firm level it is said to emerge from a culture associated with specific control and reward systems.

C.2. Stages of Trust

The separation of reason and emotion led to a distinction being made between *personal and calculative trust* (Williamson (1993)) or between *relational and calculative trust* (Rousseau et al. (1998)). According to Rousseau et al. (1998), calculative trust means that "[...] parties trust but verify under conditions where willingness to trust is limited to specific exchanges" (p.369). Just as personal trust is seen as a first step towards subsequent system trust, calculative trust is also seen as a first stage of trust which, through repeated interaction, becomes relational trust. Information originates within and through the relationship and forms the basis of relational trust. Through this process the cognitive, rational elements are transformed into affective trust. Thus, relational trust rises and solidifies through interaction, and has a lot more potential for overcoming moments of crises than calculative trust.

The process of trust can be looked at in terms of a stage model which follows the general process of development of a relationship (Bierhoff (2008) and Petermann (1996)). Like Rousseau et al. (1998), Bierhoff (2008) assumes that an initial rational basis of exchange is gradually supplanted by more "valuable" stages over time which are based on coordination and emotional bonding. Relational trust is enhanced through a cognitive process and suddenly jumps to a new level. The reduction of complexity is therefore not a make-or-break decision but a gradual development (Bierhoff (2008)).

Lewicki and Bunker (1996) present a stage model for business relations in which trust develops over time as knowledge about the other party grows. It mutates from "calculus-based trust" which tends to be characterized by intimations of difference between individuals, to "knowledge based trust", characterized by intimations of agreement between individuals, and finally to "identification based trust" which is characterized by intimations of mutual value sharing.[46] I will take up this model later on in order to analyze the development of trust within the context of investing.

[46] Another transformation model is given by Shapiro et al. (1992) which distinguishes between "deterrence-based trust", "knowledge-based trust", and "identification-based trust".

D. Summary Section IV

Trust can be looked at in terms of a static snapshot or as a process. The procedural view can be divided into an initial process needed to arrive at the first act of trust, and a dynamic aspect of trust which evolves within a relationship setting.

Before performing the trusting action the trustor assesses potential trustees with respect to their competence, integrity, and goodwill. All of these factors strongly shape the perceived trustworthiness of agents. Together with the general trust attitude of the trustor these beliefs on the trustees' trustworthiness lead to the formation of expectations of trust. The actual trusting action will depend further on the specific characteristics of the situation, i.e. the perceived risk. The synthesis of all these factors will determine whether the trustor will make a risky advance or not. Trusting in this sense is risky behavior.

Given that trusting is a special case of risk taking, the decision to place trust should also be determined by the risk preferences of the trustor. However, recent psychological and behavioral research shows that trust is not, or is only partially associated with the disposition to risk. So-called betrayal aversion and social preferences also influence trusting behavior significantly.

Trust is based on cognitive and emotional processes. Depending on the context and situation the mix of the two factors result in a specific form of trust. Affective trust often arises in complex, ambiguous, or contradictory situations, when information is incomplete, time pressure is high, or the trustor perceives herself as being inferior. It is often associated with caring, and taken to be a function of fairness, compassion, and integrity. In contrast, the cognitive form of trust is rather rule based and takes longer to evaluate. However, it seems that there always has to be some form of cognitive trust present for affective trust to take hold. Cognitive trust is more strongly related to competence and reliability.

An actor's experience of the initial placement of trust feeds into associated perceptions of trustworthiness, and may also affect the general attitudes towards trusting. Within a relationship trust will take on different forms and proceed through various stages as knowledge about the other party grows.

V. Trust in the Context of the Investment Decision

"Trust is the unseen faith underlying the investment value." Olsen (2008), p.2189.

In this section I apply the insights of the former sections to the context of investing. In view of the objective complexity an investor faces as described in the introductory section, I first show the different forms of trust involved in the investment environment and their interrelationship, and discuss the theoretical framework for investor trust. I then examine the investment decision from a wider perspective, and specify the investment process from an institutional investor's point of view. The standard decision calculus of risk and return is then extended by the factor trust. I further broaden the process of investing by incorporating a relationship perspective and show, that when looking at the investment decision as embedded into a relationship between an asset manager and a firm, this relationship may be seen as the location where trust originates and develops. Finally, I model the investment process together with the trust process.

A. Forms of Trust Within the Investment Context

Figure 8 places the context of investing in a market setting. It shows the forms of uncertainty involved and the different forms of trust as coping mechanisms (Ferber (2004)). The context of investing is an excellent example for demonstrating that despite the acquisition and processing of as much information as possible, there are still forms of uncertainty that cannot be controlled. An investor cannot control the developments of a whole economy or an industry sector. Technical innovation and political or legal changes are not in her hands. The investor will respond to this objective uncertainty with a specific level of confidence when defining a portfolio strategy and choosing an asset allocation.

Subjective uncertainty within the context of capital markets follows first from exogenous uncertainty. These are events beyond the direct control of the investor which occur within a certain context. Ripperger (1998) classifies the reaction to such uncertainty as hope, i.e. confidence in the generalized norms of behavior accepted within a social system. In the focal context of investing it can be called system trust, or confidence in the rules of the market place.[47] Besides

[47]Calling this form of trust hope does not mean that trust in the capital markets is to be

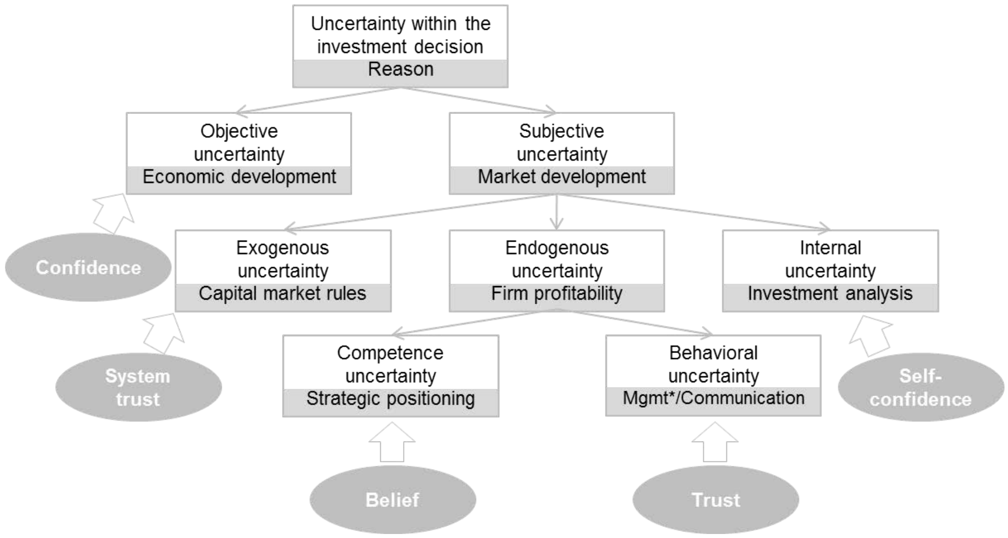

Figure 8. Investment Uncertainty and Trust. This figure shows the uncertainty involved in the investment context and the different forms of trust as coping mechanisms in the gray bubbles (adapted from Ferber (2004), p.25). *Mgmt stands for Management

trusting in the fair processing and settlement of securities, the investor must also place trust in the conventions regarding the presentation of market and corporate information, i.e. have faith in the accounting standards and auditing system of a country or system. System trust is of considerable importance in the investment context as it significantly reduces the complexity within the system and its absence may quickly lead to systemic paralysis.

The facet of internal uncertainty refers to the investor's ability to handle the tools and instruments of financial markets and securities analysis. The investor needs to believe that she is capable of dealing with complexity, of distinguishing important from unimportant information, and of making the "right" decisions. Even if the investor consults third parties, the final decision is in her own hands. Thus, self-confidence in personal competence is a precondition for a good investment decision.[48]

Trust in the narrow sense might emerge in the endogenous relationship between the trustor as the trust giving party and the trustee, the subject of trust. The investor, as the trustor, needs to put trust in the targeted firm. This means the investor has to appraise the company's competence and motivation. Com-

seen as a global "feeling". Rather, the investor trusts that her decisions regarding buying or selling of securities will be settled in accordance with the rules of the market place and that there is no discrimination by a market maker.

[48] Ferber (2004) added this aspect for the context of institutional investing to the original framework developed by Ripperger (1998).

petence refers to the actual performance. The investor needs to believe in the firm's strategic positioning and its ability to realize its value maximizing strategy. Trust, in the strictest sense, finally also touches upon the issue of behavioral uncertainty. The question here is to what extent the investor puts trust in the integrity of the people involved, particularly in the management, and also, the extent to which the investor can rely on honest communication of information which she is dependent on when undertaking the investment decision.

B. A Theoretical Economic Framework for Investor Trust

As shown in the previous section investing is a complex process involving various forms of uncertainty. This section deals with the question of how these forms of uncertainty are integrated into investment models in financial economics and which theoretical assumptions facilitate the integration of trust.

B.1. Perfect Rational Agents and Complete Information

As described in Section III D.1 in the perfect world of the neoclassical school of thought there is no room for trust. This is also true for the prevailing theoretical framework in the area of finance where uncertainty is addressed in a normative market model as follows (see Fama (1970), Jensen (1969), Markowitz (1952), and Volkart (2011), p.232):

- The problem of choice under uncertainty is defined as a situation where an agent faces a set of alternatives the consequences of which are subject to probability distributions.[49]
- Agents act rationally and are self-interested, maximizing their expected utility.[50]
- Markets are frictionless: there are no transaction costs or taxes, no regulatory constraints, assets are perfectly liquid and infinitely divisible.
- There is perfect competition.
- Markets are fully efficient regarding information processing.

[49] Deciding means to choose between one of two or more actions. To decide "account must be taken of the possible states of the world, and also of the consequences implicit in each act for each possible state of the world. A consequence is anything that might happen to the person." (Savage (1972), p.13.)
[50] See further Section III D.1.

- Investors are generally risk averse (ceteris paribus) which means that they prefer more certain to less certain income streams.

Under these assumptions Jensen (1969) summarizes the investment decision problem under uncertainty as follows: "The portfolio problem arises within this framework when the investor has assets in one period which he does not wish to consume in that period, but rather desires to carry over into the next period. His portfolio problem at any time t then becomes the selection of a combination of investments which yield him maximum expected utility. [...] That is, the investor will always choose a portfolio which is efficient in the sense that for the period under consideration it provides maximum expected return for a given level of risk and minimum risk for a given level of expected return." (p.171.)

Thus, the forms of uncertainty mentioned above—the temporal aspect of an unknown future and the uncertainty regarding the intentions and capabilities of the players—are normatively assumed away by postulating a probabilistic world. Genuine uncertainty is replaced by probabilistic risk wherein, in principle, distributions of possible future outcomes can be known with certainty (Olsen (2008)). Risk is defined only in terms of variance around the mean return.

A good example is the "Efficient Market Hypothesis" which states that a security's price is its "fundamental value"[51] (Fama (1970)). This means that for the investor the price of an asset is given by the market, i.e. agents receive all information they need to be able to figure out the correct distributions and prices are right. In the probabilistic universe transparency is given by definition as all agents are fully knowledgeable[52]. In such models, trust is superfluous (Olsen (2008)).

B.2. Asymmetric Information, Incomplete Markets, and Bounded Rationality

Only by softening the rigid neoclassical assumptions and allowing for different information levels between agents, i.e. by admitting market imperfections, can room be made, at least in principle, for the analysis and incorporation of trust

[51] The fundamental value of an asset equals the discounted sum of expected future cash flows.

[52] Investors also form expectations *correctly*, that is, they process all available information correctly and the discount rate is consistent with a normatively acceptable preference specification. Most often it is also assumed that individual rationality also means consistent beliefs (the rational expectations equilibrium). Agents' beliefs are correct when their subjective distribution of future realizations of unknown variables is indeed the distribution that those realizations are drawn from (Barberis and Thaler (2003)).

in a capital market context. As the standard decision calculus of an investor is based on risk and expected return, it seems reasonable to try augmenting these two measures by considering the impact of trust.

I have shown that trust in the strictest sense is not just a problem of general uncertainty but also a means of coping with motivational risks, i.e. uncertainty with respect to the behavioral intentions of the potential trustee. This implies that people need to be able to choose between good or bad, between honoring or neglecting commitments, i.e. there is room for trust as soon as allowing for opportunism. Only if the trustee has the option to take advantage of the trustor and her vulnerability, may be stated that the trustor is able to make a trusting choice.

That the trustee may use private information to her own advantage and not the one of the trustor as well has already been described in Section III, D.2 when explaining the behavioral risks involved by modeling trust as a principal-agent relationship. When applied in the context of investing, the information asymmetry which exists between the management and the investor community is clearly pivotal. Once it is assumed that the management may take advantage of private information, external investors will demand a certain premium in order to compensate them for the missing information or for their uncertainty regarding management intentions. Ferber (2004), by referring to Tiemann (1997), calls this surcharge a premium of mistrust.[53]

Besides the various approaches to trust from the perspective of new institutional economics, a number of behavioral approaches have also emerged. These try to explain, on the one hand, how investor trust is formed by relating it to the investor's *perceived risk* of an asset, and on the other hand, by asking what the effect of aggregated trust in a population is on financial markets.[54] I will now focus on the former approaches that try to explain the role of trust in the investment process and deal with the latter aspect of aggregated trust on financial markets in the next sub-section.

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[53] I will take up this thought in Section VI, A as a way to explain the interrelationship of trust and information and its potential effects.

[54] While behavioral finance has the potential to analyze trust since it covers the psychological aspects of information and risk behavior (Barberis and Thaler (2003), Shefrin (2007), and Shiller (2003)), it has generally tended to shy away from the topic (Olsen (2008)). Ferber (2004) uses a behavioral approach to trust in the context of the investment decision of institutional investors.

Olsen (2008) summarizes several trust-risk relationships identified in the literature thus:

- There appears to be an inverse relationship between trust and perceived risk.
- Trust is used as a proxy for more objective measures of risk by investors when there is:
  - high investment complexity,
  - time pressure increases,
  - familiarity decreases,
  - an investment is judged to be difficult to evaluate.
- In the face of strong trust investors might believe that the recommended investment will be both safer and more profitable which might lead to an inverse relationship of risk and return.
- Trust seems to be related to more than just personal levels of risk aversion.[55]

For Ryan and Buchholz (2001), Olsen (2008), and Guiso et al. (2008), various components add up to the perception of a potential investment, one of them being trust, or more precisely, the various forms of trust as shown in Figure 9.

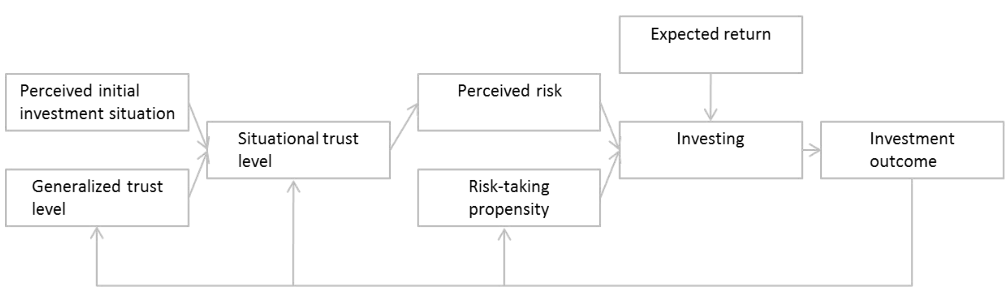

Figure 9. Risk and Trust Factors Influencing the Investment Decision. This figure depicts the various factors that influence the investment decision. Trust is here an antecedent of perceived risk. The perception of the various components is adjusted by experience throughout the investment relationship (adapted from Ryan and Buchholz (2001), p.180).

According to Ryan and Buchholz (2001), the perceived initial investment situation, the generalized trust level regarding the market, and the integrity of

[55] See Section IV, B for a detailed discussion.

the management, sum up to the situational trust level, i.e. the perceived risk of the investment. The actual investment decision is taken by including the factors perceived risk, the risk-taking propensity, and the expected return. The actual investment outcome, thus the experience with the investment target as trustee, will shape the generalized attitude regarding the market, the situational trust level regarding the specific investment, and also the risk-taking propensity since over time the investment decision becomes embedded in an investment relationship.

According to Olsen (2008) the different factors that might influence the risk perception regarding the investment decision are the perception of personal control and the perception of trust. The first aspect of personal control is addressed by traditional finance. The characteristics of the investment object—for example the statistical return distribution of the financial asset—and the investor's personal investing acumen feed into this factor. The latter aspect of perceived trust incorporates additional implicit or explicit real world indeterminacy. This influence will vary according to the circumstances, and is what Ryan and Buchholz (2001) call situational trust. Situational trust is heavily influenced by the investor's perception of a firm's management competence and integrity. Even though the positive feature of the measures of traditional finance is their objectivity, Olsen criticizes the traditional risk metrics such as variance of return and market beta because they do not allow for "trust as risk influence" (Olsen (2008), p.2194).[56]

Another approach is presented by Guiso et al. (2008) which best summarizes the influence of the various forms of trust on the investment decision. For these authors the "decision to invest in stocks requires not only an assessment of the risk-return trade-off given in the existing data, but also an act of faith (trust) that the data in our possession is reliable and that the overall system is fair" (p.2557). Trust is "the subjective probability individuals attribute to the possibility of being cheated. This subjective probability is partly based on objective characteristics of the financial system (the quality of investors protection, its enforcement, etc.) that determines the likelihood of frauds such as Enron and Parmalat. But trust also reflects the subjective characteristics of the person trusting" (Guiso et al. (2008), p.2557 and 2558).[57]

[56]The influence of trust on perceived risk will be small in the case of securities where default is rather unlikely and quite large in the case of securities where the future is less predictable and investors have to rely firmly on corporate executives or other experts, as in an IPO.

[57]Here they refer to the aspect of cultural influence that forms our general attitude to trust

B.3. Aggregated Trust and Financial Markets

Seminal research has been done by Guiso et al. to help understand the impact of aggregated trust on financial markets (Guiso et al. (2004), Guiso et al. (2008), and Guiso (2010)). The authors focus on people's general propensity to trust in their evaluations and find that more trusting people are more likely to invest in riskier assets.[58] Their results are robust after controlling for risk and ambiguity aversion. For them trust is not a proxy for loss aversion or for other determinants of stock market participation, such as correlations with general optimism. They also test for more specific forms of trust i.e. in institutions that facilitate stock market participation, and find again that the more trust there is, the larger the effect on stock market participation. They suggest that the effect of trust could partly explain the participation puzzle[59]. In their paper of 2006 Guiso et al. use Dutch and Italian micro-data as well as cross-country data to show that culture has a clear influence on stock market participation.[60] Trust is all the more important, the more unfamiliar investors are with the stock market, or the more they lack data, although this effect is likely to remain even when sufficient experience and data are available. Where mistrust is deeply rooted, all information is doubted.

Olsen (2008) uses the effect of trust and its relationship on perceived risk as a hypothesis for thinking about anomalies such as the "small firm effect", "home bias", and the "market behavior of IPO shares". On a macro-level Olsen (2008) relates trust to market anomalies like the "risk premium puzzle", "insufficient diversification by non-professional investors", and "market herding and stock bubbles".

A major decline in trust quickly demonstrates how sensitive the relation between trust and the financial system can be, e.g. the financial crisis in 2007. Guiso (2010) refers to this crisis as a trust-driven financial crisis.[61] He points out that the role of a decline in trust may be distinguished from a drop in

(Guiso et al. (2003) and (2004)).

[58]In high trust areas individuals are more likely to use checks, invest less in cash and more in stocks, have higher access to institutional credit, and make less use of informal credit. According to their work of 2008, less trusting individuals are less likely to buy stock, and even if they buy stock, they buy less of it.

[59]The participation puzzle refers to the question of why so few people invest in the stock market.

[60]This aspect is also confirmed by Grinblatt and Keloharju (2001).

[61]Part of the decline of the markets has of course to be seen as a revision to correct for overoptimistic investor expectations. The decline may have been necessary to punish dishonest financiers and restore market discipline.

confidence concerning institutional solvency or liquidity. For him the "collapse in trust was provoked by the revelation of the opportunistic behaviors that the unfolding of the crisis brought to light, of which the Bernard Madoff fraud is emblematic, and has contributed to shed a dark light on the whole financial industry" (Guiso (2010), p.2).

He confirms that it really does take a long time to build up trust once it has been destroyed—this is not just a sentimental saying. The implications for the future of financial markets need to be clearly acknowledged. The decline in trust is likely to affect people's willingness to enter financial contracts and bear risk, and thus to increase the cost of risk capital and hamper the process of financial development. The effects on financial transactions that are likely to be felt in the coming years can be summarized as follows (Guiso (2010)):

- Trust and investment in risky assets: The consequence of a decline in trust is likely to be a move towards safer securities (also Guiso et al. (2008)).

- Trust and investment in ambiguous securities: A decline in trust moves investors towards more familiar contracts and more local contracts which reduces portfolio diversification and amplifies home-bias.

- Trust and diversification across stocks and banks: There is a move towards more familiar and more local assets and financial institutions. Additionally, agents will enter more contracts to diversify the risk of opportunistic behavior and reduce their exposure. Both effects are costly.

- Trust and the demand for advice and delegation: A decline in trust in intermediaries also means that investors may prefer to make their investment decision on their own. This may lead them to seek more simple portfolios, and this does not necessarily mean that they are better in terms of risk and return.[62]

Guiso (2010) also proposes specific measures to help rebuild trust, i.e. to raise the trustworthiness of financial intermediaries by limiting opportunistic behavior. He points out that the problem of a trust crisis cannot just simply be solved by increasing regulation. The role of regulation may even fail to restore trust if intermediaries lack interest. Guiso (2010) expressly underlines

[62] Guiso et al. (2009) show a correlation between the decision to engage in a bank run and the prevailing level of trust (this is from data before the crisis). Those who lost faith in banks and the financial system withdrew their money first.

the significance of player attitude when seeking to coordinate the selection of an honest equilibrium: “[...] there is no automatic mechanism that guarantees that intermediaries will all agree to voluntarily adopt these policies. Rather, if dishonest behavior is dominant among intermediaries, even the honest ones may on their own be unwilling to adopt these measures and help the economy move to a better outcome where competition drives out dishonest behavior.” (Guiso (2010), p.20.)

C. Setting and Player Specifications

An elusive term like trust can be analyzed only within a specific context. The more specific, the better the conclusions that can be drawn. This is why I will specify more closely the principal-agent relationship between an investor as the principal and trustor and a firm as the agent and trustee, where the investor is an *institutional* investor and the firm targeted for investment is a *listed* company.[63] The focus is thus on a relationship between two institutions, and even though being quite complex constructs, on an abstract level the two individual institutions can both be seen as single entities.[64] At the same time all institutions are of course represented by individuals, who act accordingly. The relationship at hand is illustrated in Figure 10.

C.1. Institutional and Individual Elements

The good news is that institutional arrangements help reduce complexity as the parties agree publicly to act according to certain rules. On the firm side, for example, the process of listing entails agreeing to stock exchange guidelines on transparency and good faith. Other institutional parameters are rules provided by the economic and legal environment on satisfactory accounting standards, appropriate protection against securities fraud, and regulation requirements. The human aspect of the people leading the firms, however, still remains evident, i.e. their competence and human qualities, both positive and negative. Indeed, management quality is one of the most important reasons for investing in a particular firm (Ernst et al. (2009) and Manson and Harrison (2002)).

Regarding the counterpart, the term institutional investor[65] covers to two

[63] These specifications relate in particular to the empirical analysis below.

[64] “It is brought out in economic theory that organizations sometimes behave like individual people, so that a theory originally intended to apply to people may also apply to (or may even apply better to) such units as families, corporations, or nations.” (Savage (1972), p.8.)

[65] The main types of institutional investors are pension funds, life insurance companies, and

areas: *institutional investment* and *asset management*. According to Davis and Steil (2001), institutional investment refers to "[...] specialized financial institutions that manage savings collectively on behalf of small investors toward a specific objective in terms of acceptable risk, return maximization, and maturity of claims" (p.12). Asset management[66] in turn can be said to be the process by which the assets collected by institutional investors are invested in the capital markets.[67] The human element on this side of the relationship centers on the asset manager. Even though the asset manager is not as "free" in her investment decision as an individual investor, due to regulatory and own institutional constraints designed to promote greater rationality ((Drill (1995) and Verma and Verma (2008)), the institutional investment decision still incorporates certain "human aspects".[68]

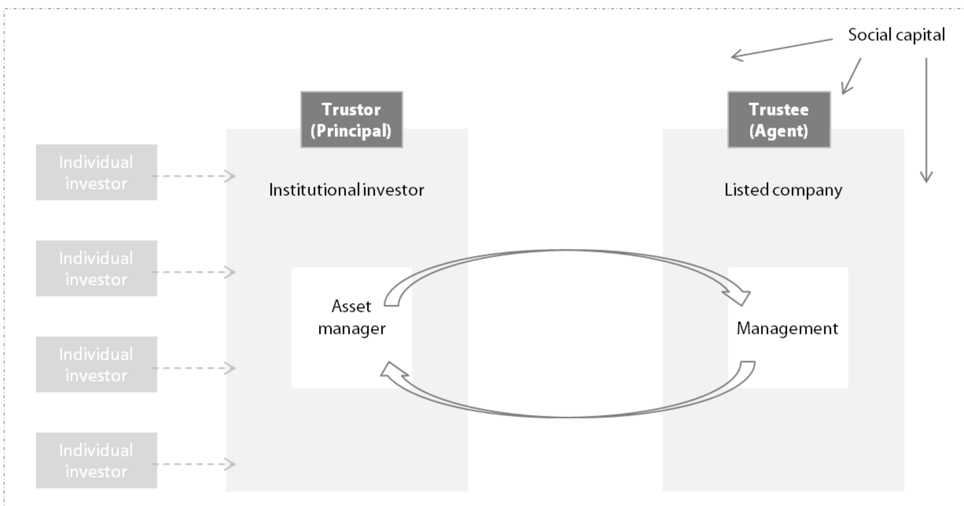

Figure 10. Investment Relationship Between an Institutional Investor and a Listed Firm. This figure illustrates the investment relationship between an institutional investor and a listed firm. This relationship is conditioned by institutional and individual elements (own illustration).

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different forms of mutual funds. Also trading desks from financial institutions and corporate treasury operations can be seen as institutional investors.

[66] Other terms used besides "asset management" are "fund management", "investment management", "money management", and "portfolio management".

[67] In a legal sense, the asset manager may or may not be a part of the institutional investor, thus, either internal or external to the institution itself.

[68] Those human aspects which may imply deviations from the rational decision making have been covered in several studies, e.g. Beckmann et al. (2008), Glaser et al. (2005), Höhener (1993), Kent et al. (2002), Menkhoff et al. (2009), and Shapira and Venezia (2001).

C.2. Institutional Investment Process

Although institutional investors differ strongly in terms of contractual relations between the owners of the assets and the asset managers, definition of liabilities, the locus of risk bearing[69], regulation[70] etc., there are still certain steps of institutional investment that are common to all types of institutional investment decision making (Bodie et al. (2005), pp.939–1003): First, the optimal risk-return trade-off of the investor, the investor's risk tolerance in pursuit of return is evaluated.[71] Second, constraints such as liquidity, investment horizon, inflation sensitivity, regulations, tax and accounting considerations, and specific needs which are linked to the nature of the liabilities, all need to be assessed. And third, the investment strategy is developed and implemented by choosing asset categories, monitoring market conditions (history and forecasts), and determining expectations of rates of return over the holding period.

In other words this investment process can be split into the following three steps (Davis and Steil (2001), Hagenstein et al. (2006), and Lottenbach (1995)):

- Strategic asset allocation: long-term decision on the disposition of the overall portfolio.
- Tactical asset allocation: short-term adjustments in the light of short-term profit opportunities (market-timing).
- Security selection: choice of individual assets both strategic and tactical.

Ferber (2004) also distinguishes a macro- and a micro-level of influence regarding the investment decision.[72] Asset managers are part of an institutional setting and are most often confronted with a more or less predefined strategic asset allocation (macro-level) compared to individual investors who make decisions solemnly according to their personal preferences. Nevertheless, on a micro-level, asset managers might still influence the final investment decision as

[69] Risk can be either completely assumed by the institution (guaranteed returns) or borne wholly by individual investors. There now seems to be a shift in the latter direction. This implies that household influence on asset allocation is likely to grow.

[70] Considerable differences exist regarding the regulation of institutional investors. Regulation affects fiduciary and contractual obligations, which in turn affects risk bearing and information disclosure, and other investor protection provisions. See for example Spillmann (2004).

[71] See for example Zellweger (2003).

[72] Ferber (2004) talks also about a meso-level which is too detailed for the discussion in this essay.

individuals, via their specific role within the investing firm, and their relationship to the targeted company.[73]

C.3. Information and Institutional Investors

The enormous growth of the asset management industry during the last decades has changed the picture of financial markets considerably (Leippold and Rohner (2008)).[74] In financial theory institutional investors assist the system in fulfilling the function the system is supposed to fulfill[75] and institutional investors are taken to be a sign of highly developed markets. Institutional investors are supposed to have access to superior information and to absorb and process information better than individual investors (Davis and Steil (2001)). The strong presence of institutional players also affects the information system, as will be shown in Section VI. In a study by the Deutsches Aktienmarktinstitut 2009, institutional investors stated that the direct personal contact with the management of a firm was their the most important information source. This is followed by other sources such as the quarterly and as annual reports including the financial statements, investor meetings, shareholder information, and company websites (Ernst et al. (2009)).

D. Trust and the Investment Process

I now place the investment decision in a relationship-setting between the asset manager and the firm to demonstrate how trust may play a role in the investment process and how it may develop within the relationship. The investment-trust

[73] "In this basic sense, asset managers acting for institutional investors face the same problem in investment as other agents in the economy do, be they households, companies, banks, or the government. The main distinction is that whereas the other types of investor invest largely on their own behalf, institutional asset management is a service involving management (by a securities firm, insurance company, or mutual fund) of an investment portfolio (bonds, equities, property) on behalf of a client (individual investor, company, bank, or pension fund). This disjunction requires communication and appropriate incentives or control mechanisms between the parties to ensure an optimal outcome." (Davis and Steil (2001), p.52 and 53.)

[74] The most important reason for the strong increase of institutionalization on the supply side is that saving was made attractive to households through the ease of diversification, improved corporate control, deregulation, ability to take advantage of technological developments, and enhanced competition. On the demand-side institutional growth may be explained by demographic developments, growing wealth, and the difficult issues regarding the social security pensions (Davis and Steil (2001)).

[75] According to Merton and Bodie (1995), these functions are (1) clearing and settling payments, (2) pooling of funds and subdivision of shares, (3) transfer of economic sources, (4) managing uncertainty and control risk, (5) providing price information, (6) dealing with incentive problems.

relationship is depicted in Figure 11.

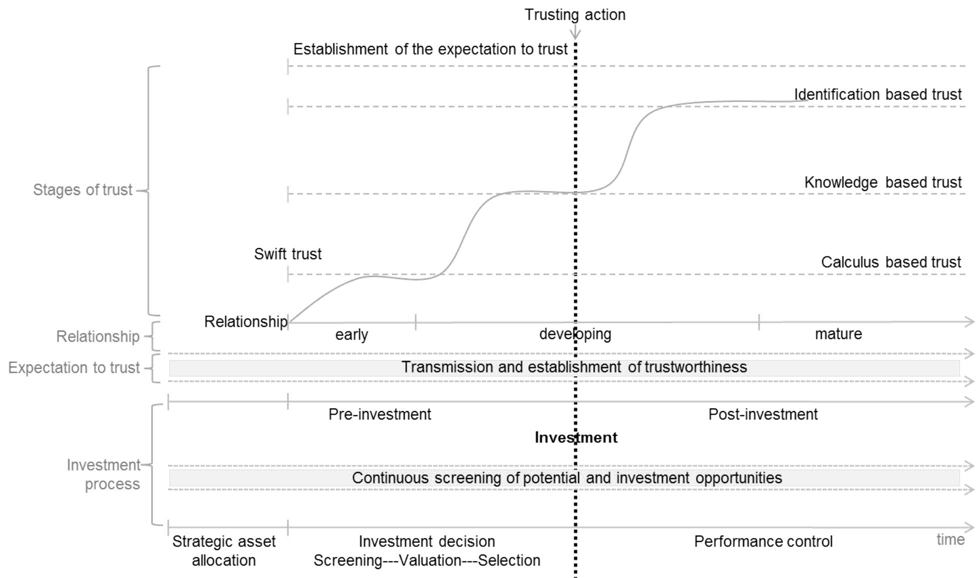

Figure 11. Investment-Trust Process. This figure depicts the investment-trust process. It is divided into pre- and post-investment aspects. The act of investing marks the fulfillment of investing as a trusting action. In the pre-investment stage the investment is screened and evaluated and an expectation on the trustworthiness of the firm is established. Since investing is part of a dynamic and relational setting, different forms of trust develop (own illustration, input from Ferber (2004), Lewicki and Bunker (1996), and Meyerson et al. (1996)).

The investment-trust process is divided into a pre-investment and a post-investment area. The investment-trust relationship starts when the interest in the firm is sparked for the first time and it is from this very moment that a perception of trustworthiness is or is not formed. This first contact can occur after a process of strategic asset allocation when the asset manager is looking specifically for a certain firm, or may be of more random nature through the information provided directly by the firm, personal contact with the firm, or of information provided by a third party. During the pre-investment period potential investment opportunities are screened and appraised. Information on the specific securities is gathered and processed and the securities are selected.

Up to the actual investment decision and the subsequent act of investing money, economic consequences are only related to the costs of information search and evaluation. During this time, the expectations related to firm trustworthiness are established. But only the act of placing a risky advance, the actual act of investing, marks the fulfillment of investing as a trusting action.

Where there is no personal knowledge or history of interaction with the targeted investment object or the investment decision needs to be taken quickly, so-called "swift trust" may be helpful. It is a way to handle the unknown by reflecting on similarities and commonalities, or by using the opinion of someone with a good reputation.

Due to the dynamic nature of financial markets, the investment decision is not a one-off decision but has to be constantly re-evaluated after the initial investment decision. The post-investment period is thus characterized by performance control and necessary adjustments. Like investing, trust is also dynamic. Since investing is a form of relationship, the associated trust levels change as time passes, and as new information is accumulated and experience gathered. There is continuous re-shaping of perceptions concerning the firm, and the level and form of trust. Initially it might be "calculus based trust", then becoming "knowledge based trust" after some time. The final stage is "identification based trust" where a very strong identification with the investment object is reached.

Looking at investing as part of a relationship over time may also help understand the effects of disappointment. The later stages such a relationship are said to have an increased potential for overcoming a crisis of trust since they are firmly embedded in a relationship where personal elements have become relatively more important.[76]

E. Summary Section V

The aim of this section was to demonstrate that trust plays a definite role in the context of investment decisions.

The act of investing is not only strongly influenced by specific firm characteristics, but various forms of trust feed into the final investment decision. The investor needs to have a general positive attitude—confidence—in the economic development and she needs to put trust in the financial market system. Trust in the narrow sense refers to the positive attitude towards a specific firm and its profitability which is derived from a belief in the company's competence, its strategic positioning, and faith in the integrity of the management and its willingness and ability to provide honest information.

Within the neoclassical framework of modern finance investors base their investment decisions upon the parameters of risk and expected return. The probabilistic models which assume perfect rationality and complete information

[76]This could also explain why in cases trust is damaged at such a level, the negative impact is even stronger as personal disappointment is particularly hard-felt.

leave no room for the analysis or inclusion of trust. By allowing for information asymmetries, market imperfections, and opportunism, new institutional economics makes room for the possibility to explore trust by relating it to a risk premium in case investors suspect managers of attempting to take advantage of privately owned information.

There are a few behavioral approaches that discuss the relationship between trust and risk within the investment setting, as well as the impact of social trust on financial markets. From their point of view the various forms of trust shape the risk perceptions of an investor with respect to an investment target. Besides the objective measure of risk and expected return, individuals apply subjective probabilities when estimating the reliability of the provided information, the fairness of the overall system, and the possibility of being cheated.

The aggregated level of social trust in a society influences the way individuals engage in financial markets. This is most clearly seen during and after major financial crises. The empirical evidence indicates that in terms of their impact on trust, there is a difference between a loss of confidence in the solvency of financial players and the revelation of opportunistic behavior.

The investment decision of an institutional investor investing in a listed firm is conditioned by institutional elements on both sides, but also by the relationship between asset managers and target firms and their management. Thus, institutional and personal elements of trust shape the final investment decision. In the pre-investment stage the asset manager forms specific expectations regarding the trustworthiness of the firm by gathering suitable information and evaluating the target. The actual act of investing can be seen as the fulfillment of the trust act.

As investing is part of a dynamic environment, the investment decision has to be continuously evaluated. Personal experience is built up as the relationship progresses and feeds back into perceptions of trustworthiness, changing the level and form of trust accordingly.

VI. The Role of Information for Trust Within the Investment Context

"The best device for creating trust may be to establish and support trustworthiness." Hardin (1996), p.29.

This section highlights the role of information and information transparency within the investment context and for the process of trust. Information is crucial for both investing and trusting respectively. Seeing investing as a trusting action underlines why information plays such an important role but also in which way it does not, where supposedly it should. In the first section below I go into the role of information in investing, and the demand for transparency and its interrelationship with trust. I then proceed by focusing on the role of information in the establishment of a perception of trustworthiness, and integrate the aspect of information in the investment-trust process[77].

A. Information and Investing

In Section IV I pointed out that investing provides a suitable context for showing that despite the acquisition and processing of as much information as possible, certain forms of uncertainty cannot be reduced by information processing alone.

Still, information is at the core of finance (Stiglitz (2003)) and is the lifeblood of capital markets (DiPiazza and Eccles (2002)). Information and its unfettered flow are one of the preconditions for the functioning of financial markets (Volkart (2011), pp.62-66). In the ideal case of perfectly functioning markets prices fully reflect any necessary information, public as well as private (Fama (1970)).

At the same time raising capital on financial markets implies a natural information gap in that it entails a separation of ownership and control[78]. Without wishing to get into a discussion on market efficiency[79], clearly the assumption of strong market efficiency obviates the need for firms to expend any effort on transparency (Labhart and Volkart (2009)). Firms would willingly provide all information necessary for investors to allocate resources efficiently since disclo-

[77] The investment-trust process was introduced in Section V.

[78] As described by Berle and Means (1950) in their analysis of the modern corporation and by Fama and Jensen (1983b).

[79] The dispute on market efficiency is still not settled. Labhart (1999) and Moll (2002) provide a good overview on the history of market efficiency, while Stiglitz (2000) elaborates on the contributions of the economics of information.

sure can only serve to increase the market value of the firm.[80]

Once the possibility of asymmetric information is accepted[81], from the investor's perspective, information can be seen to play two key roles in market-based economies: an ex-ante role as the basis for the investors' decision making in evaluating the return potential, and an ex-post role in allowing capital providers to monitor the use of their capital resources (Beyer et al. (2009)). The normative goal in the light of information asymmetries is to find mechanisms that support the alignment of the intrinsic and the market value of a firm. From this point of view corporate information disclosure[82] is an unambiguous good.

Labhart and Volkart (2009) specify several positive effects stemming from increased quality of information disclosure. First, it may lower the cost of capital and thereby support a more efficient allocation of capital via two mechanisms: on the one hand improvements in information flow and accuracy may increase the liquidity of the shares in the market and thereby reduce the cost of capital, while on the other hand investors may ask for a lower risk premium as improved information means there is less uncertainty regarding the future development of a firm. Further, a more constant and broad information flow may help offset the impact of ad-hoc disclosure. Finally, by reducing investor monitoring costs with respect to management by investors a positive effect on corporate governance is also to be expected.

Several empirical studies support the benefits of information disclosure. Eugster and Wagner (2010) distinguish four strands in literature as areas of improvement: (1) a positive effect of increased disclosure on the cost of capital (Barry and Brown (1985), Diamond and Verrechia (1991), Hail (2002), and Sengupta (1998)), (2) improved stock liquidity (Leuz and Verrechia (2000) and Welker (1995)), (3) impact on corporate reputation (Milgrom and Roberts (1982)), and (4) impact on market valuation and returns (Eugster and Wagner (2010) and Healy et al. (1999)).

Even though Labhart and Volkart (2009) argue that the possibilities of creating value through information are widely underestimated, and even though

[80] According to Grossman (1981), Grossman and Hart (1980), Milgrom (1981), and Milgrom and Roberts (1986) firms will disclose favorable information to increase their market value. Withholding information will be punished by the market because it will be interpreted as unfavorable information with the consequence that all information will be disclosed.

[81] As for example nicely described by Akerlof's (1970) market for lemons.

[82] Here corporate information disclosure refers to mandatory disclosure (disclosure through regulated financial reports), voluntary disclosure, and disclosure about firm's through information intermediaries (Healy and Palepu (2001) and Nöldeke (2007)).

clear supportive empirical evidence is available, corporations still tend to resist demands for increased disclosure. As a matter of fact, there are also several arguments against an increase in disclosure. The question is whether the additional cost of collecting and providing information and expected legal costs outweigh the positive effects of increased disclosure described above. Loss of competitive advantage is one common argument against more disclosure since there is no guarantee that all market participants will increase their transparency (Eugster and Wagner (2010) and Labhart and Volkart (2009)). Recent work by Hermalin and Weisbach (2010) present increased disclosure as a double-edged sword since, although principals may be able to make more informed decisions, it may also generate additional agency problems and costs, including a rise in executive compensation. Hermalin and Weisbach (2010) thus argue for an optimal level of disclosure rather than a general plead for more disclosure.

A normative framework of financial public reporting that goes beyond obligatory rules and regulations and makes concrete suggestions for implementation was developed by Eccles et al. (2001) and Labhart (1999): *Value reporting* is defined as "the official, external reporting of a company, which is designed (i) to reduce the information asymmetries between the internal and external view of value based management and (ii) is additionally part of value based management" (Labhart (1999), p.30). This is illustrated in Figure 12.

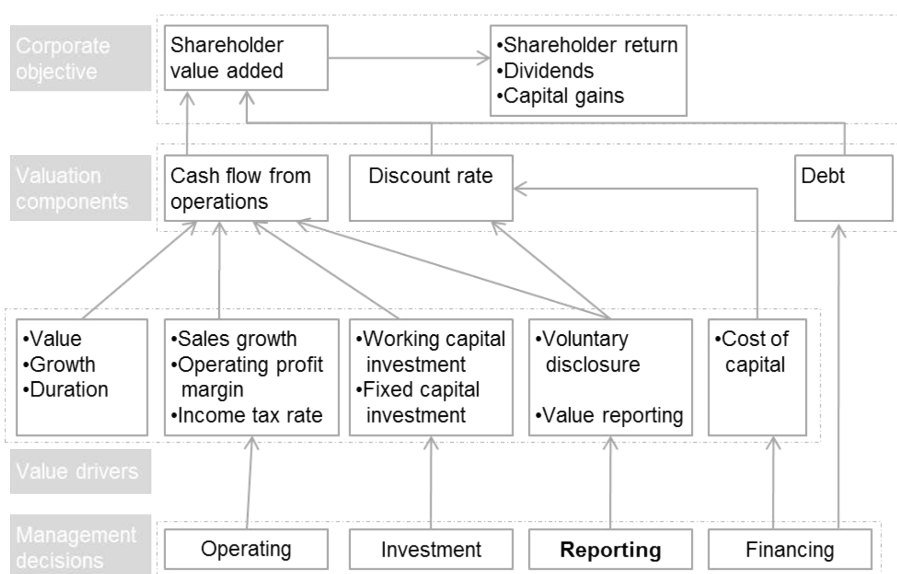

Figure 12. Enhanced Value Driver Concept. This figure illustrates the effects of value reporting on shareholder return via the impact of lower discount rate and reduced uncertainty concerning operating cash flows (Labhart (1999), p.275).

In an extended version of the shareholder value creation concept of Rappaport (1986), Figure 12 shows value reporting, and thus, information itself as one of the value drivers of a firm (Labhart (1999)).

In fact information and communication policy is one of the five central areas of corporate finance (Moll (2002), (Volkart (2008b), and Volkart et al. (2005)). This also emphasizes the key role of investor relations for listed firms. Every management should strive to limit scope for adverse market reaction by assisting existing and potential investors in correctly interpreting information in order to transform the intrinsic value created by the firm into a correct external view (Labhart and Volkart (2009)). The endeavor to improve information provision and communication is often referred to as *transparency* effort.

B. From Information to Transparency

Somehow, the concept of transparency seems easier to grasp than that of trust. It is apparently easier to picture. But what exactly is meant by transparency in the context of corporate information?

Volkart (2008b) characterizes transparency as the provision of honest, open, and relevant information which aims especially at reducing information asymmetries between stakeholders. Rawlins (2008) defines it as "the deliberate attempt to make available all legally releasable information—whether positive or negative in nature—in a manner that is accurate, timely, balanced, and unequivocal, for the purpose of enhancing the reasoning ability of publics and holding organizations accountable for their actions, policies and practices" (p.7) and decomposes transparency into the following four components of communication:

- participation
- substantial information
- accountability
- secretiveness[83].

Rawlins' definition (2008) refers in the first place to the reciprocal aspect of participation which enables the transformation of substantial information into transparency. It is not only the availability of information but as Cotterell (1999) also states: "the active participation in acquiring, distributing and creating knowledge" (p.419). The most relevant question here concerns defining

[83] A reverse item for openness.

what the other (dependent) party really needs (see also Fung et al. (2007) and DiPiazza and Eccles (2002)). Following Moll (2002) and Volkart (2008b), one-sided information provision alone may not be sufficient to produce transparency since the latter requires a two-sided process of effective communication.

Rawlins (2008) also mentions the aspects of secretiveness (used as the reverse item for openness) and accountability when discussing transparency. Both of these attributes have an active dimension in that transparent organizations are supposed to bear responsibility for their words, decisions, and actions. For Swift (2001) one premise for accountability is that "organizations should account for their actions through the provision of information to stakeholders and society" (p.16). Accountability is thus one facet of transparency which is externally visible. Rawlins refers to accountability as balanced information, thus as an equilibrium between good and bad information, between secrecy and sugar-coating. This balance may be related also to the amount of information available. Transparency does not mean that all information has to be revealed. In fact, too much information may mean less understanding (Strathern (2000)).

One last crucial aspect refers to the fact that organizations are only able to project true transparency externally, if it is a vitally lived principle firm internally. This is why transparency is also seen as a positive signal as it is taken to indicate a well established internal organizational structure, i.e. an organizational structure which is is not too complex or hard to overlook, as a precondition for the development of transparency. Thus, poor or missing transparency is often taken as a signal, symptom, or reason for potential risk and possible aberration (Volkart (2008b)).

C. The Transparency Movement

In the last hundred years transparency, as a concept of governance, has attracted more and more public attention (Florini (1998), Fung et al. (2007), and von Furstenberg (2001)).[84] Its prevalence has been strongly supported through the legal enforcement of transparency principles. The development of and the possibilities provided by information technology greatly serve to aid transparency. Besides, the growth of market-based economies, globalization, and the spread of

[84] Fung et al. (2007) confirm that transparency is not a new idea in governance. For example in the U.S. in 1913 Louis D. Brandeis recommended new laws to require public companies to disclose profits and losses in order to stop insider deals and investor deception, referring to the Pure Food and Drug Act of 1906. Hermalin and Weisbach (2010) refer to Ripley (1927) and Berle and Means (1932), cited in this essay as Berle and Means (1950).

a global civil foundation for society can also be seen as drivers of a transparency movement (Tapscott and Ticoll (2003)).[85]

In assessing various systems of public information provision[86] Fung et al. (2007) rate the system of corporate financial information as being highly effective and as being one of the most advanced, since information becomes deeply embedded within the decision processes of both information users and corporations.

While there is clear room for improvement in corporate information systems, one has to acknowledge that corporations have generally done well in adapting to the severe changes of recent decades. Many firms make a serious effort to track the investors' needs and to respond to their needs. Technology is used to make information readily available, readable, and comparable. Further, financial markets now have to incorporate not only interaction between investors and firms, but also interaction between numerous other players in the system. This increases transparency on the one hand but also complexity on the other, as information flows multiply with the number of players and channels. Clearly, the bottle neck to corporate information is the firm itself but there is a great amount of information additionally generated by third parties. Analysts, brokers, financial advisers, and other intermediaries all attempt to arrange information in a way that suits the investors' needs (Beyer et al. (2009), Fung et al. (2007), and Nöldeke (2007)).

Beyer et al. (2009) demonstrate that even when an information system arises endogenously, e.g. when it is in the interest of all parties in a corporate environment to solve valuation and stewardship problems, a certain degree of regulation in the disclosure system might still be necessary. There are several reasons for this. First, there might be a misalignment of insiders' and investors' incentives which may make it difficult to convey information credibly. In this sense, good regulation can be seen as a way of improving the credibility of information as parties commit to certain levels of disclosure. Second, information

[85] Roberts (2009) criticizes the ideal of complete transparency as an impossible fantasy, showing the limits of transparency. After the most recent incidents regarding public transparency around Wikileaks, Hebling and Bialetti (2010) also advise against the trend towards full transparency as this would mean a world of informational overflow. Klenk (2009) points out that in times of reorientation corporations need periods of less than total transparency. According to Tapscott and Ticoll (2003), transparency has proved to be a constructive force, e.g in the case of whistle blowers at Enron & Co or institutional investors that pull out of the market (see also Dyck et al. (2010)).

[86] The assessment included the financial industry, and areas of safety, health, and education.

has many properties of a public good[87] as it is so crucial to the functioning of the markets. Parties may have incentives not to provide information, even though social welfare would be maximized.

Referring to the last century, it can be seen that the legal foundation of transparency policies was primarily a reaction to negative events that touched the public as a whole in some way.[88] The U.S. financial industry is a good example: the Securities and Exchange Act (1933/34)[89] was the response to the stock market crash of 1929; the Sarbanes-Oxley Act (2001) was the response to the bankruptcies of Enron, WorldCom, and other large, well-known, and respected companies; present, the discussion and implementation of increased regulation following the experience of the latest financial and economic crises is a further example (Schenker-Wicki (2008) and Guiso (2010)). For Fung et al. (2007) all these represent failure of the disclosure system to keep pace with market innovations and demonstrate how costly a non functioning transparency system can be.

The tightening of regulatory controls in the wake of crises needs to be viewed critically, first, because transparency policies are viable political means to prove the capability of governments to be able to solve problems (Fung et al. (2007)). In addition, tighter regulation after negative events is not a signal of trust but rather of mistrust (Guiso (2010)).[90]

D. The Interrelationship of Trust and Transparency

In general, trust and transparency are positively related and this holds for both sides of the relation. Transparency breeds trust just as trust breeds transparency. This is confirmed in a large body of empirical work. Norman et al. (2010) show that the perception of trust—both affective and cognitive—in leaders is influenced by their positivity and transparency. Irlenbusch and Sliwka (2005) find that trustworthy behavior is stronger in more transparent employment situations. Ferrante (2006) demonstrates a positive impact on employees' trust in the management and in the firm's performance where accounting infor-

[87] Public goods are characterized by being non-rival and non-excludable, where the first aspect refers to the property that the consumption of the good by one agent has no effect on the availability for others, and the latter aspect means that it is impossible or very costly to exclude someone from its consumption (Frank (1997)).

[88] See again Fung et al. (2007) for a thorough analysis of so-called "targeted transparency" in different public areas.

[89] The Securities and Exchange Act orders publicly traded companies to disclose assets and liabilities.

[90] See also Section V, B.3.

mation is shared internally. The following paragraphs present different possibilities for linking information and transparency to the phenomenon of trust.

D.1. Information, Transparency, and the Definition of Trust

A first link between information, transparency, and trust concerns the definition of trust itself. Trust is a way of overcoming an existing information gap without actually closing it. Consequently, in a state of transparency trust would be useless, and what is more important in the present context, striving for transparency offers an alternative to trust as a means of handling the risk resulting from the information gap (Swift (2001) and Zowislo and Schulz (2006)). It is precisely by accepting lack of access to all information that system trust may arise and operate as a means of reducing complexity. Only by willingly accepting vulnerability in terms of not knowing everything can personal trust develop.

However, information is also a fundamental aspect in deciding whether to place trust at all because it is the basis for the establishment of trustworthiness. This will be discussed later on in more detail.

D.2. Information and the General Attitude to Trust

Also the interrelationship between transparency and the general disposition to trust is of interest. The attitude with which we encounter a stranger, a form of blind trust, is not primarily a problem of information. Still, Kanagaretnam et al. (2010) affirm in an investment game setting, that transparency increases trusting behavior and trustworthiness in one-shot behavior, while in a repeated setting, both increase even in the absence of transparency. For the authors this indicates that disclosure efforts can be used to bring together agents who are only loosely connected. Fisman and Khanna (1999) document a positive relationship between trust and information when analyzing the general attitude to trust (using cross-country data). This relationship becomes stronger in the presence of two-way communication and as different stages of trust develop in a relationship. Both studies show that the significance of information as well as the various forms of trust change as the relational context progresses.

D.3. Information and Relational Trust

The dynamic nature of trust and information within a social relationship is also confirmed by Chang et al. (2010) who demonstrate within a repeated trust game that trustworthiness is a belief about the probability of reciprocation. At the beginning this belief is based on initial impressions as a guide to judgment and is then updated in the course of interaction and in the light of experience. The positive influence of communication on bilateral trusting relationships in a trust game setting is further confirmed by Valley et al. (1998) and Buchan et al. (2006).

D.4. Information and the Trust Process

As mentioned at the beginning, different forms of information play a role before and after the initial engagement to trust and throughout the process of trust. This is illustrated in Figure 13.

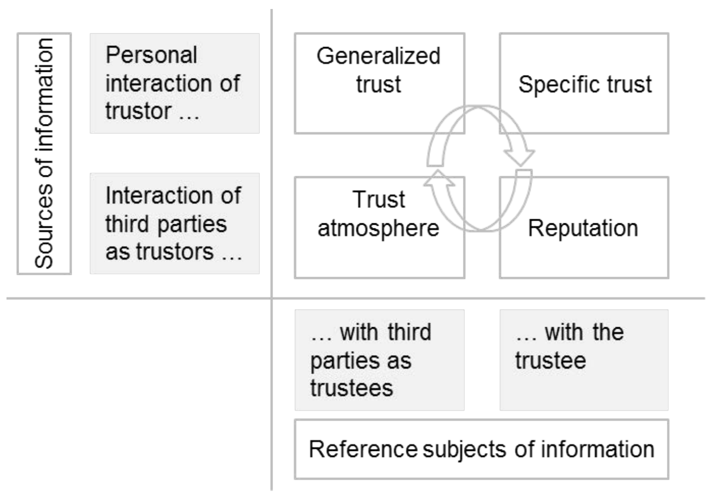

Figure 13. Forms of Information in the Process of Trust. This figure depicts the origin of information—the trustor's own experience versus experience of third parties—and the reference subjects of information—referring either to the potential trustee or to third parties as trustee—as a way to classify information and show the different influences in the establishment of the expectation of trust (Ripperger (1998), p.99).

In the first part of the process the trustworthiness of the trustee is examined as the basis for the formation of the expectation to trust. At this point personal experience does not yet exist and the trustor will thus have to draw upon the experience and information of others and the reputation of the trustee. This is the decisive stage in the development of a relationship of trust and the reason why information provision and communication are vital in this stage. The general collective experience of others with others within a social system is called the *trust atmosphere*. The more positive experiences within a social system, the higher the quality of the trust atmosphere (Ripperger (1998)).

The *reputation* of the trustee, i.e. the available public information concerning the potential trustee, has a particular strong impact on trust.[91] Although being two distinct concepts[92], reputation and trust are highly related as they have the same origin, i.e. the perception of trustworthiness (Seemann (2008)).[93] Trustworthiness is the quality of parties that causes reputation and trust. Trust cannot be commanded. It has to be earned through trustworthy behavior.

Once personal experience is established the information and experience of the past is "extrapolated" into the future. Positive past experience, familiarity, or so-called retrospective trust provide a foundation to "risk into the future" in the form of prospective trust (Ripperger (1998)).[94]

D.5. Transparency as a Signal of Trustworthiness

In the Swiss Code of Ethics transparency is one of seven principles. The others are responsibility, integrity, respect, fairness, sustainability, and corporate citizenship (Volkart (2011), p.1081). Tapscott and Ticoll (2003) define business integrity as the basis of an open enterprise. Such integrity comprises honesty, accountability, consideration (benevolence), and transparency. What binds trust and transparency together is their ethical foundation in honesty and integrity.[95]

As mentioned before, transparency effort is not only necessary for the trustor to reach a prudent decision on trust, it can also be seen as a signal, a leap of

[91] Reputation also has a strong influence on the trust atmosphere.

[92] The literature on reputation is quite young, starting with Shapiro (1983) but only really taking off with the book by Fombrun (1996) titled "Reputation: Realizing Value from the Corporate Image". There is a subtle difference between reputation and trust. According to Swift (2001) an "[...] organization with a good reputation can be relied upon to behave in a manner consistent with reputation, but might not be trusted to behave ethically under uncertain circumstances" (p.23). I see trust as something that emerges only upon personal engagement. Though reputation will influence the establishment of a trust expectation, it is not a substitute for one's own experience. Cabral (2005) defines trust to be a situation when agents expect another agent to *do* something, while reputation is a situation when agents believe another agent to *be* something. In game theory trust and reputation are often used interchangeably. The reputation of a player is the probability that she is a privately observed type or will take a certain action (Camerer (2003)). Trustworthy behavior is in this context often referred to as reciprocity. For extensive work on trust and reciprocity see Basu (2006), Chaudhuri et al. (2002), Dohmen et al. (2009), Fehr and Gächter (1998), and Sutter and Kocher (2003).

[93] Seemann (2008) defines the other factors making up corporate reputation to be credibility, reliability, and accountability.

[94] See also Section III, C.

[95] As described above for trustworthiness to develop integrity is needed in addition to competence and goodwill. According to Whitener et al. (1998), there are five components that influence the employee perception of managerial trustworthiness. These are behavioral consistency, behavioral integrity, sharing and delegation control, communication, and demonstration of concern. Experiments show that the perception of CEO honesty is also crucial for attracting investors (Tanner et al. (2010)).

faith on the part of the potential trustee. If the trustee acts transparently, she signals trustworthiness and indicates that there is nothing to hide (Tapscott and Ticoll (2003)).[96] As in trust, transparency implies a willingness to be vulnerable. The trustee needs to trust the party with whom information is shared (Rawlins (2008) and Ripperger (1998)).

Denize and Young (2007) confirm this aspect in an empirical study which focuses on communication as the core of the process of a business relationship. They also see trust as a dynamic experience and relationship-as-process. The causality of trust and information is inextricably linked and reciprocal, and the relationship should be seen from the perspective of both parties. Communication builds connectedness. Within a relationship, trust and information exchange influence each other.

Akkermans et al. (2004) assess trust and transparency in supply chain management between multiple independent companies. This is an business area where information transparency receives particular stress. Transparency is achieved through reinforcing the dynamic interaction of trust levels between partners and the alignment of transparency and trust. The authors also stress the procedural and relational nature of trust as a reinforcement mechanism. Past communication and a history of co-operative behavior are positively related with trust and negatively with opportunistic behavior. Repeated interaction, which they call habituation, supports trust and transparency in arriving at a form of a psychological relief since familiarity breeds trust. They also state that both concepts are based on plain and honest work, especially at the beginning of a relationship. A virtuous circle develops in which trust and transparency reach ever higher levels. They suggest managers to adopt an "open kimono attitude", i.e. to show all the information and knowledge one possesses to all parties involved.

D.6. Trust, Networks, and Information Channels

Effective information channels within social systems are crucial for the development of a culture of trust. Information on reputation needs to be transfered rapidly and exhaustively (Ripperger (1998)). Olsen (2008) refers in this context to the importance of communication and social networks.[97] Also Levin and

[96] Tapscott and Ticoll (2003) refer in their book "The Naked Corporation" to the saying "If you're going to be naked, you'd better be buff!".

[97] The importance of information channels within social systems is especially well observable in virtual networks as the study of Hertzum et al. (2002) illustrates. They evaluate the effect

Cross (2004) find that the ebb and flow of knowledge transfer among social ties is mediated by trust.

E. Transparency and Trust in the Investment Relationship

Finally now, the insight of the previous sections is merged in order to complete the picture on information, transparency, and trust within the investment relationship.

E.1. Information and the Investment-Trust Process

This section highlights the role of information in the investment-trust process as developed in Section V and which is shown in Figure 14.

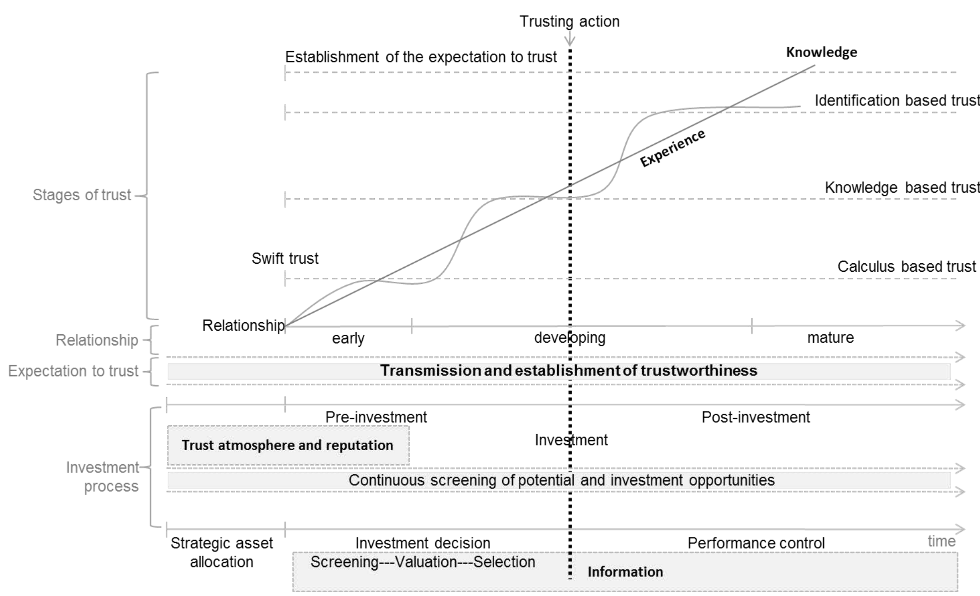

Figure 14. Information and the Investment-Trust Process. This figure points out the role of information in the investment-trust process (displayed in gray). Before personal experience is established, the information from others and the reputation of the investment target is crucial for further engagement. These aspects of information drive the initial formation of trust expectation which is the foundation for the actual act of investing. As investing is seen as a relationship, personal experience is established, grows over time, and influences the various forms of trust (own illustration, input from Ferber (2004), Lewicki and Bunker (1996), and Meyerson et al. (1996)).

Before actually investing—the trusting action—the asset manager will inform herself about the targeted firm, using information provided by the firm

of trust on the assessment and use of different information sources. Using two case studies they show that in the software-engineering environment people are very cautious about the trustworthiness of information sources when there is interaction outside the network.

and third parties, in order then to perform the specific investment analysis. This pre-investment stage is characterized by the search for information on the competence and trustworthiness of the targeted firm.

Particularly in cases where the investor has no prior experience with the firm, company reputation exerts a strong influence on investor perception. Owing to its intimate relationship with trust, firm reputation is nowadays often its most important intangible asset (Klenk (2009), Seemann (2008), and Volkart and Schenker-Wicki (2006)). Especially for listed firms which are part of well-established information systems reputation is crucial since all news, good and even more bad, spreads like wildfire.

As the investment decision is part of a constant re-evaluation process perceived trustworthiness remains important post-investment but its perception is more strongly influenced by personal experience which accumulates over time and may even induce a change in the form of trust experienced.

The investment relationship remains a relationship of trust. Even though outside investors become direct stakeholders in the firm, the separation of ownership and control ensures that they remain dependent on the provision of relevant and honest information by the firm.

If the investment relationship is lived as an active relationship, maybe even involving personal contact with the management of a firm or the investor relations department, the form of trust may change and thus influence the perceived investment risk. A personal relationship is also an important source of information when considering further engagement. Empirical evidence shows that trust seems to be based on oral rather than written communication.[98] In fact, face to face communication has a stronger influence on investors than written documentation and professional analysts often rely on information from face to face meetings (Olsen (2008) and Shiller (2000)).

The trust and information flow have a reinforcing influence on each other. Guiso et al. (2008) suggest a link between trust and local knowledge which flows in both directions: more knowledge may overcome the barrier created by the lack of trust, mistrust will be less of a problem for local investments, and trust facilitates the collection and dissemination of information. They find that increased familiarity generates greater stock market investments.

[98] A possible explanation is an evolutionary one, namely that oral communication is older than written communication.

E.2. The Financial System as a Small World

The strong embeddedness of the investment decision within a much lager system is revealed not only by the formal aspects of market and portfolio activity, but also by the social and professional structures of financial markets which serve as information channels or even as information substitutes.

According to Olsen (2008), the financial system corresponds to a "small world" network, or more precisely to an "aristocratic small world network". A small number of experts such as a company's management, asset managers, and financial analysts serve as opinion leaders and maintain relations with a circle of followers, their clients.

The unique operational characteristic of such a network is that information spreads quickly due to the large number of weak connections between opinion leaders.[99] As trust is strengthened by interaction, the large number of connections, although relatively weak, enhances the potential trust in the network, which in turn enhances the sensitivity to new information.

Further, key opinion leaders play an important role regarding stability. Where trust in a key opinion leader is lost, the whole network may easily collapse and be difficult to restore. This is shown by related sharp negative market reactions and long periods of volatility during recovery.

While such networks generally speed up the flow of information they may also have less welcome amplifying effects since similar information is obtained from multiple sources. On the other hand, one positive effect is that inconsistencies in information may be attenuated.

E.3. The Non-Communicable Nature of Trust

Trust, just like information, is a precondition for the functioning of financial markets (Volkart (2011), p.64). I have already identified different forms of trust that influence the investment decision. Trust in the market system is one crucial form. Zowislo and Schulz (2006) critically review the recent public call for transparency as a means of raising trust. They refer to it as the "chimera of transparency" and point out the "non-communicable nature of trust" as sincerity becomes insincere when communicated (also Gambetta (2000), Luhmann (2000), and Osterloh and Weibel (2006)).

Swift (2001) sees the prevailing public discontent with and critique of busi-

[99] For example if people attend the same golf club.

ness despite the great effort being put into accounting and reporting systems and the advancements made towards transparency as resulting from the highly acclaimed principle of accountability. This principle is premised on managerial opportunism described in economic agency theory. For Swift, such an approach is not suitable for handling information gaps since it assumes so-called positive distrust and suspicion. Accountability is concerned with institutionalization of stakeholders' legal rights of the access to corporate information rather than with discretionary or voluntary disclosure. As a consequence, controls and regulations create an "artificial" form of trust. In contrast, where the axiom of distrust is replaced with an axiom of vulnerability and confidence in the goodwill of the other party, trust is based upon interdependent relationships. In order to transcend managerial opportunism, an organization has to establish a pattern of and a reputation for trustworthy behavior (Swift (2001)).

O'Neill (2002) also critically reviews the belief in accountability as transparency. For O'Neill (2002) intelligent accountability means that "well placed trust grows out of active enquiry rather than blind acceptance. In traditional relations of trust, active enquiry was usually extended over time by talking and asking questions, by listening and seeing how well claims to know and undertakings to act held up over time." (O'Neill (2002), p.76.)

While there are valid aspects in these arguments, their context of application should never be forgotten. Given the unsurmountable information gap between a firm and its investors, striving for transparency is clearly an indispensable precondition for a real genesis of trust (Volkart (2008b)). Communication is able to generate trust if credibility can be conveyed (Gamper et al. (2006), Moll (2002), and Hubig and Siemoneit (2009)).

Since investing can per se be seen as an act of trust and the investor is dependent on the information of the firm in establishing a picture of the trustworthiness of the targeted company, it becomes even clearer how important reliability and credibility of information are. If people do not believe in what is communicated by a firm, there will be no way for investors to engage in a relationship with the firm and even less chance of them being willing to bear risk. Following Volkart (2008b), transparency, trust, and communication create credibility, which is also an important ingredient for reputation. Where a good reputation is absent, nobody, and in particular no one new, will surrender their money to a company's management.

Still, it remains true that trust is not primarily a problem of information.

What connects the idea of trust and transparency is actually the ethical dimension (Rawlins (2008)). Information and communication are important for trust formation in that they allow for honest transfers of relevant knowledge to outsiders.

This does not change the inherent non-communicable nature of trust. Osterloh and Weibel (2006) refer to trust as a *worthwhile investment* within and between organizations which deviates from more conventional forms of investments: First, many risky advances without legal coverage may be necessary and it may take time until these investments yield fruit. Second, after a rather cumbersome start, the utility gain grows disproportionately because trust breeds trust. Third, strong erratic behavior destroys the level of trust sustainably. Construction and destruction do not behave symmetrically over time.[100] Fourth, trust, unlike other forms of effort, cannot be demanded. "Trust me" is more a promise than a command. The impact of such a promise is not in the hand of the party uttering it, thus trust can hardly be "managed". Finally, trust can only be endowed and never be bought. Trust cannot be strategically exploited. In fact, the more trust is consciously aspired to, the greater the likelihood that trustworthiness is undermined. What can be done is to provide the conditions necessary for the development of trust and trustworthiness.

F. Summary Section VI

Section VI sought to collect together various insights concerning information and transparency and their significance for trust in the investment context. As investing implies the separation of ownership and control it is only natural that information asymmetry occurs. Potential investors are dependent upon the firm for the provision of relevant information, so that a firm's intrinsic value can be transformed into its market value. Even though there are various arguments for improved corporate disclosure, there are also arguments against it leading to resistance and criticism from firm-side.

Efforts to advance the information provision by firms are referred to as corporate transparency. Corporate transparency means that the firm provides relevant information honestly and in an open way by including the dependent party in a communication process. The objective is to find an optimum level of

[100] According to Olsen (2008) negative events and mistrust are attributed a greater significance than positive events probably due to loss aversion, i.e. the general tendency of people to exhibit as stronger preference for avoiding losses than for acquiring gains.

disclosure rather than striving for an unreachable goal of full transparency.

Information is thus crucial for an investor wishing to invest in a firm for the first time. As little or no personal experience exists yet, the information obtained from others, as well as firm reputation, are both decisive and they strongly influence the perception of the investor. Reputation can only be built up through trustworthy behavior which signifies that investing can really be looked at as an action of trust. Information in the pre-investment stage has fundamental significance because without it any risky advance would be perceived as being too risky for the investor.

Investors remain outsiders even following the initial investment, i.e. investing remains an act of trust post-investment. Still, once the relationship has been initiated, knowledge grows through experience, familiarity feeds in, and the form of trust may change. Personal contact to the management of the firm will further influence trust and perceived risk.

Information transparency and trust are phenomena that reinforce each other through interaction and communication. After a crisis of trust, transparency efforts may generate mistrust even though they are necessary to clean up the mess. To restore trust, though, hollow transparency is not enough. Credibility as well as the believe in honesty and integrity has to be restored.

VII. Empirical Investigation on Trustworthiness and Transparency Within an Investment Relationship

The insight gathered heretofore is now to be investigated empirically. From a theoretical perspective, the establishment of a trustworthy reputation is the link between transparency and trust in the context of investing. A company's information and communication policy plays a crucial role in this regard. My main objective in this section is to document the empirical indications of a possible interrelationship between the two phenomena *perceived trustworthiness* and *perceived transparency* in the context of listed firms and institutional investment activity.

In a first step, I decomposed the concept of trustworthiness into the components *competence*, *integrity*, and *goodwill*, and the notion of transparency into the components *substantial information*, *participation*, *accountability*, and *secretiveness* (a reverse item for openness). I asked institutional investors to evaluate a specific investment target in terms of their perception of overall trustworthiness and company transparency as well as in terms of the respective components. In a second step, correlation and regression analyses were used in order to find out which components of trustworthiness and transparency are most highly related to overall perceived trustworthiness. In the theoretical discussion above it was shown that the investment decision is not solely determined by the characteristics of a specific asset. The decision is embedded in an investment environment, several other forms of trust, just as investor and relationship characteristics may impinge on the formation of perceived trustworthiness and trust. So finally, in a third step I examined whether other forms of trust and investor and relationship characteristics influence the perception of a specific target's trustworthiness.

The results of the interrelationship analysis are presented in subsection C, while subsection A explains the idea of the empirical study and the approach used in analyzing the data. Subsection B provides some background information on the sample, its general investment characteristics, and its relationship to the evaluated company.

A. Idea and Approach of the Empirical Study

This section provides some background information on the empirical analysis starting with some remarks on the measurement of trust, the notion behind the survey design, and the approach used in data analysis. Further, relevant information on the company analyzed, as well as on the procedure and sample characteristics is provided. Section A is cloded with some statistical remarks.

A.1. The Measurement of Trust

Trying to measure a concept like trust is a difficult, if not impossible undertaking. It is a soft factor, highly subjective, and multidimensional. This has to be borne in mind when approaching such a topic. I am quite conscious of the obvious limits of the analysis conducted and make no pretense of truly quantifying such evasive phenomena as trust or transparency. The present study must rather be seen as an approximation which, by incorporating the context and including as much information about the whole picture of the situation as possible, puts trends of the perception of a behavior forth. This is also why responses to factors apart from the core variables of trust, trustworthiness, and transparency were assessed in the questionnaire.

Although great advances have been made on the measurement of trust over the last decade the issue is far from closed.[101] Two forms of trust measurement can be distinguished: those based on experiments and those based on survey analysis.

The great advantage of experiments is that they capture the behavioral essence of trust. Trusting behavior can actually be observed, whereas in surveys people might answer either referring to their experience in the past or how they would like to or think they should behave in the future (Fehr (2009)).[102] The typical game played in experiments is the so-called trust game introduced first by Berg et al. (1995).[103] The most commonly used survey measure for generalized trust is based on a question used by the World Value Survey of the American General Social Survey with data that has been collected since 1972 and which has been mainly applied to document cross-country differences. The question is: "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?"[104]

In any case, the biggest challenge lies in finding a pure measure of trust, if at

[101]See especially Ben-Ner and Halldorsson (2010), Engelmann (2010), and Fehr (2009). Most empirical work is nowadays done either regarding the measurement of the generalized trust propensity and social trust or to show that humans might deviate from fully rational behavior.

[102]Pros and cons of both are discussed nicely by Fehr (2009) and Engelmann (2010).

[103]The trust game has been explained in Section III, D.2.

[104]Normally response options are binary, thus "Most people can be trusted" and "Can't be too careful". Guiso et al. also work with this question in their various papers.

all possible. There are enormous difficulties here. For example, trusting behavior in experiments could simply be an expression of an inclination to altruism, gregariousness, or of a person's ambiguity or risktaking propensity.

Besides measuring trust, the purpose of my empirical study was also to measure transparency and in such a way that the two measures could be interrelated. This led to the use of the survey measure developed by Rawlins (2008) as it fits the purpose best.[105]

A.2. Survey Design

Rawlins (2008) created an instrument for measuring the interrelationship between transparency and trust and applied it to the relationship between an organization and its employees. I basically replicated Rawlins' approach, and applied the model to an analysis of the relationship between a firm and its investors. To fit the new context, I made slight changes in the questionnaire. In particular, I expanded the evaluation of the transmission of substantial information as this is of vital interest to the investor community.

The use of a single case has obvious limitations concerning generalization of results. Nevertheless, the method seemed appropriate, as stated by Yin (2009): a case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, where the boundaries between phenomenon and context are not clearly evident, and where multiple sources of evidence may be used. Bearing this in mind I also decided to ask various questions regarding the relationship the respondents cultivate with the company in order to be able to better appraise the responses provided.

Moreover, I expanded the approach of Rawlins in two respects. First, I asked questions regarding other forms of trust besides the specific trust in the company at hand, with the goal of checking for interrelations between the various forms.[106] Secondly, I aimed to integrate several facets of the relationship between the institutional investor and the firm hypothesizing that they influence the perception of both parties and thus the investment decision of the investor.

This is where I drew upon input from the work of Ferber (2004). Ferber set his focus on the perception of trust within the investment decision of institutional investors, and also used a survey as the empirical tool. He distinguished

[105] See for the precise questions used by Rawlins, Rawlins (2008) p.9.

[106] I used the question of the World Value Survey for the assessment of the generalized trust propensity.

between the macro- and micro-level of the investment decision. Compared to individual investors who base their decisions on personal preferences, asset managers are part of an institutional macro-setting and are most often confronted with a more or less predefined strategic asset allocation. Nevertheless, there is still scope for micro-level activity in that asset managers might influence the final investment decision as individuals, in their role within the investing firm, or through their personal relationship with the targeted company.[107] Hence, how other forms of trust apart from the specific trust in the firm are perceived, as well as investor and relationship characteristics are also included in the analysis.

Two final remarks are needed before going into further detail concerning analysis. In his paper Rawlins (2008) refers to the measurement of *trust*. His approach is to decompose trust into perceptions concerning the factors competence, integrity, and goodwill. In order to maintain the link with the theoretical discussion which needs the documentation of the behavioral dimension of trust, I measure the perception of *trustworthiness* rather than trust.

Finally, owing to the dynamic nature of the setting and the reinforcing elements of feedback between transparency and trustworthiness, establishing causality is problematic. This has to be borne in mind when trying to capture the two aspects of information exchange and trustworthiness, as both influence each other.[108]

A.3. Data Analysis and Research Hypotheses

The core data derived from the inquiry was analyzed in three steps:

Step I: The perception of specific trustworthiness and the perception of transparency are said to be the result of the perception of the respective *components* of trustworthiness and transparency. In a first step I examined whether the components of trustworthiness and transparency frequently mentioned in the literature are similarly applicable to the relationship between a listed firm and institutional investors, and also which components explain overall trustworthiness and transparency best. On an overall trustworthiness level I looked at whether there is a difference between investor perceptions of firm trustworthiness in general compared to investor perceptions of the trustworthiness of the specific firm's management. Additionally I always checked whether there is a

[107] See also Section V.

[108] Denize and Young (2007) also use a survey measure with a similar goal.

difference of opinion between asset managers and analysts, and between equity and debt investors.

- Hypothesis IA: Overall trustworthiness is the result of the components competence, integrity, and goodwill.
- Hypothesis IB: There is a difference between perceived firm trustworthiness and perceived management trustworthiness.
- Hypothesis IC: Overall transparency is the result of the components substantial information, participation, accountability, and secretiveness (a reverse item to openness).

Step II: The literature suggests that the specific trustworthiness perceived may be influenced by other forms or inclinations of trust, namely, an individual's general propensity to trust, the general attitude towards investing as an act of trust, and various forms of institutional trust, such as trust in the stock market, in economic development, or in large corporations. In a second step I thus assessed the attitude of the institutional investors sampled regarding these different forms of trust and their interrelationship. On the specific trust level I distinguished again between the perception of the trustworthiness of the firm in general and that of firm management. Additionally I checked whether there is a difference of opinion between asset managers and analysts, and between equity and debt investors.

- Hypothesis IIA: There is no interrelationship between the general trust propensity and the perception of trustworthiness regarding a specific firm.
- Hypothesis IIB: There is an interrelationship between the general attitude of institutional investors regarding investing as an act of trust and the perception of trustworthiness regarding a specific firm.
- Hypothesis IIC: There is an interrelationship between different institutional forms of trust and the perception of trustworthiness regarding a specific firm.

Step III: Finally, I analyzed the interrelationship between the perception of trustworthiness and transparency. Once again, the existence of a potential difference between the overall trustworthiness of a firm and that of its management was checked for. Additionally, investor and relationship characteristics were included in the analysis to examine whether there is a difference in opinion among asset managers and analysts, and equity and debt investors, whether the respondents cultivate a personal relationship with the firm, and whether disappointment with the firm has already occurred.

- Hypothesis IIIA: Overall perceived trustworthiness and overall perceived transparency are positively related concepts.

- Hypothesis IIIB: Investor and relationship characteristics influence the perception of trustworthiness and transparency and their interrelationship.

A.4. Case Description

Holcim, the company analyzed in this case study, is a globally active company, present in around 70 countries, and with about 90,000 employees. Holcim is listed on the Swiss Stock Exchange. The company supplies primarily cement and aggregates. Holcim has a strong commitment to sustainability and, as can be seen below, mentions the importance of values like trust and transparency explicitly in its mission statement:

"Holcim's corporate values—strength, performance, passion—are in essence a promise to perform and thus help to build and sustain trust with our stakeholders.

- Strength: being a solid partner; based on the integrity of our people, and our global leadership and competence

- Performance: delivering on our promises to each other and to our stakeholders, and providing the best solutions for our customers

- Passion: embodying dedication and commitment, and caring about everything we do: our people, our customers, our communities and the environment

We aim to deliver on this promise through our products, services, communications and, above all, the behavior of our people. This is vital, especially given the pace of growth Holcim has sustained in recent years, both organically and through acquisition. Operating with integrity: At Holcim, we recognize the importance of operating with integrity and apply high standards of corporate governance in the conduct of our business. By demonstrating responsible and transparent leadership and management, we earn the trust of our stakeholders, which is essential to achieving long-term success." (www.holcim.com)

As the firm has such a strong focus on trust and transparency in its mission statement, the present analysis can be seen as an evaluation of the stated commitment.

A.5. Procedure and Sample

The questionnaire was administered as a web-based survey using the software NetQuestionnaires. An email invitation including a personalized link to the survey was sent to 1485 institutional investor contacts of Holcim's investor relations team. The survey was conducted over a period of one month including one email reminder. 75 surveys were completed, given a 5 % response rate.[109]

Due to the nature of the investor contacts provided by the company this is not a representative study. It is not possible to draw any conclusions regarding sample demographics nor whether the sample represents the total investor structure.[110] The positive aspect of such an actively used set of contacts is that the latter can be said to be "intimate enough with the organization to establish trust judgments and evaluate its efforts at transparency" (Rawlins (2008), p.10). Certainly this needs to be considered when drawing conclusions.

The questionnaire—which can be found in the appendix—was divided into two parts: the professional perspective (Questions 1.–25.) and some questions regarding the specific individual (Questions 26.–30). Equity and debt investors were first addressed separately and their respective responses were subsequently merged. So, whenever I talk about *the investors* I refer to both equity and debt investors, unless otherwise stated. Owing to the possibility of "routing" within the web-survey, analysts had to answer slightly fewer questions than asset managers (they do not have direct responsibility for the assets under management). Questions that were only posed to asset managers are marked with (AM), those only posed to analysts with (A). Whenever reasonable, response options were randomized.[111]

After an in-depth analysis of the data, the results were subjected to review

[109] Compared to Ferber (2004) and Rawlins (2008), which had a response rate of about 30%, this is rather small but their samples and procedure were also quite different. A more comparable inquiry done in 2009 by the Deutsches Aktieninstitut presented a 10% response rate (Ernst et al. (2009)).

[110] This is a difficult aspect in any case as the exact investor composition is not fully known to the company itself.

[111] Randomized response options are indicated in the text.

by Holcim's investor relations team and were found to be consistent with prior investor opinion surveys performed by the company.

A.6. Statistical Remarks

The scaling characteristics of the data call for specific statistical methods (see Schumann (2006), Siegel (1957), and Winkelmann and Boes (2009)).

Most of the survey data is of ordinal scale. Trustworthiness was treated as an attitude and measured on a six-point scale of agreement, from "strongly disagree" (- - -) to "strongly agree" (+++).[112] The same ranking was also applied in assessing perceptions of transparency. Relative importance was measured using a five-point scale from "not important at all" (1) to "very important" (5). Correlation analysis was used to analyze interrelationships between ordinal variables. Field (2009) suggests using Kendall's tau (τ), instead of Spearman's rho (ρ) in cases where the dataset is rather small and where there is a large number of tied ranks. Kendall's tau was thus used in the present study.

Furthermore, differences between certain groups of respondents were analyzed. Thus, nominal data was also considered. In order to ascertain whether there is a possible interrelationship between nominal variables the chi-square test (χ^2) was applied.[113] I used Cramér's V as a measure of the strength of the interrelationship based on the chi-square test. This is standardized between 0 and 1.[114] The interpretation of cross-tabs was also applied here.

The original data was always analyzed using such non-parametric methods. For testing interrelationship (Section VII, C) the data had to be aggregated. I calculated aggregate mean values on the basis of the individual item values. Statistically this is not precise but in terms of the context and the interpretation of this data it is still justifiable, especially given the rather limited number of data points.[115] Aggregated data was analyzed with parametric methods using Pearson's r and linear regressions.

In order to be consistent throughout the text and to be able to compare the aggregated and non-aggregated results of the correlation analysis, I present Pearson's r in the text, and the corresponding non-parametric measure in the

[112] For the analysis, the (- - -) to (+++) were transformed into 1 to 6.

[113] This test measures the discrepancy between the observed counts of two variables and what you would expect the counts to be if the variables were unrelated.

[114] The closer it is to 1, the stronger the interrelationship. In the area of sociology 0.3 implies already a significant interrelationship.

[115] This has been confirmed by empirical researchers both in the area of economics and sociology and was also applied by Rawlins (2008).

appendix. Overall, the main conclusions do not change, no matter which method was applied.

B. Sample Characteristics and Its Relationship to Holcim

This subsection describes the characteristics of the sampled institutional investors and their relationship with the evaluated firm. It serves primarily as background information in order to aid interpretation of the results for interrelationship analysis presented in subsection C. First, the main sample characteristics are described. This is followed information on the general investment information behavior of the sampled institutional investors, and on attitudes and levels of the different forms of trust. After that, the relationship to Holcim is described in detail and the reasons for investing or recommending Holcim as an investment are analyzed. The subsection closes by presenting the institutional investors' evaluation of Holcim's trustworthiness and transparency effort.

B.1. Main Sample Characteristics

Table I summarizes the main characteristics of the respondents of the sample. The sample represents the point of view of various institutional investors and is quite balanced in terms of asset managers and analysts. An equity investors' point of view clearly dominates. Hence, statistically significant results are rather rare on the debt investor side. The respondents are fairly experienced in the area of asset management and bear responsibility for the funds under their control. Almost the whole sample is male.

Table I
Sample Characteristics

Characteristics	Description	Details or Remarks
Type of investor	The sample includes various types of institutional investors, most are from different areas of banks or mutual funds.	Pension funds (7), mutual funds (14), insurance or reinsurance (8), different areas of banks (27), hedge funds (7), others (12).
Form of capital	13% answered from a debt investor's, 87% from a equity investor's point of view.	The strong focus on the equity side is due to the fact that only 9% of the total number of the institutional contacts are from the debt side.
Job position	40 asset managers (AM) and 34 analysts (A) responded to the questionnaire.	The 40 asset managers include 10 partners, 23 senior portfolio managers, and 7 junior portfolio managers. The 34 analysts include 15 buy-side and 19 sell-side analysts. One respondent did not specify the position.
Investment style	Most funds have a "growth-at-a-reasonable-price" or "value" strategy. On the debt side there is an "investment grade" and "corporate" focus.	Further strategies applied are "growth", "index", "absolute return", or a mix of the mentioned strategies. Only asked to asset managers.
Investment horizon	Most invest on a long term basis (44%), followed by medium (35%) and short term (22%).	The more detailed possibilities to answer were merged to these three categories. Only asked to asset managers.
Funds volume	The funds volume under personal responsibility is USD 100–5,000 Million.	This question was only asked to asset managers and answered by 20 of them.
Responsibility	Most respondents decide as a team (19) or on their own responsibility though subject to investment strategy of the firm (13), 5 decide completely on their own, only 2 after authorization.	None of the respondents does not take any decisions at all. Only asked to asset managers.
Years of experience	Sample participants have considerable professional experience in the area of asset management.	85% have more than 5 years of experience, no one less then 3 years, with a range of 3 to 44 years.
Sex	Most of the respondents are male.	72 male, 2 female, one not defined.
Age	The respondents are 26 to 66 years old.	On average the respondents are 40 years old.

B.2. Information Behavior

Respondents were asked to evaluate the importance of the following information sources shown also in Figure 15: *offering memorandum*, *rating agency*, *treasury team*, *investor relations team*, *senior management*, *annual report*, *the company's* *website*[116], *research or investment recommendations*, and *media*.

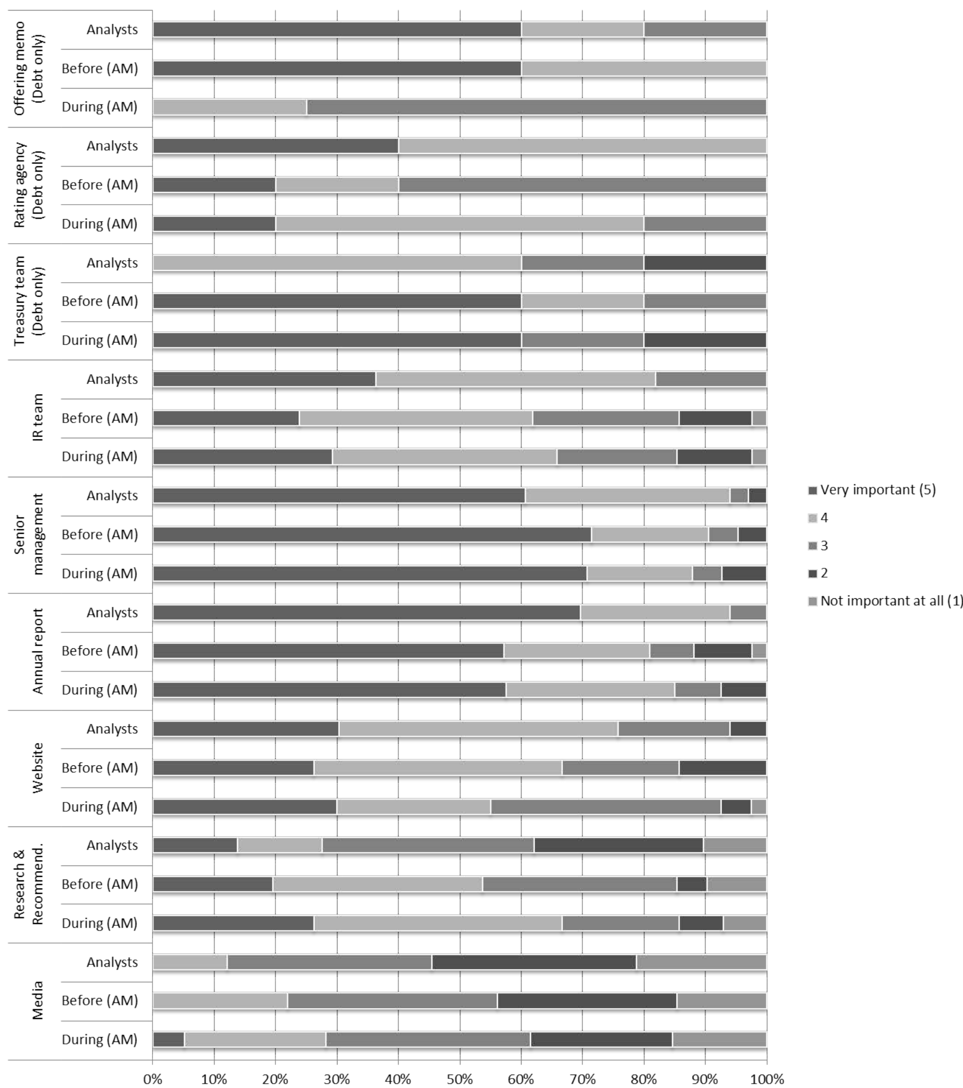

Figure 15. Sources of Information Used Throughout the Investment Process. This figure presents relative importance by source type for analysts and for asset managers (AM) from "very important" (5) to "not important at all" (1). For the asset managers the difference before and during investment is shown as well. The diagram shows the percentage of total responses for each category.

The evaluation results confirmed the theoretical assumptions in that they showed that the relationship to a firm, including personal contact, is very important for the investor. This holds true especially for the asset managers of both debt and equity. It is also noticeable that investor relations is not that

[116]The response option "website" refers to more than the use of the internet to access the annual report.

important for debt investors as a source of information.

Overall, the most important source of information about a company is *personal contact to the senior management*, followed by the *annual report including the financial statement*.[117] These results are consistent with the results of the study done by Ernst et al. (2009). For debt investors, information provided by the rating agencies is also very important. These sources are then followed in order of importance by *personal contact to investor relations*, *the company's website*, and *research or investment recommendations*. The *media* is not important.

Further, there are slight differences in terms of source importance before and during investing. The *website* is relatively more important prior to investment, whereas once the investment exists, factors such as *investment research and recommendations*, and *input from analysts and asset managers* gains in importance. The paragraphs below provide more detailed information.

Sources of Information Used by Analysts

All of the given possibilities are important for equity analysts. The most frequently stated sources were *annual report including the financial statement* and *personal contact to the senior management*, followed by the *website* and *personal contact to the investor relations team*. The information gained from *research and investment recommendations* and *media* is relatively less important. One person said that *own models* were most important.

For the debt-side analysts the *offering memorandum* and the *annual report including the financial statement* were mostly stated as being most important, followed by *personal contact to the firm* (treasury team, investor relations and senior management). Other sources were not deemed important.

Asset Managers: Sources of Information Before Investing

The asset managers on the equity side agreed with the analysts (see above). For the asset managers on the debt side *offering memorandum* and *personal contact with a company's treasury department and senior management* are most important, followed by the *annual report including the financial statement*, *a company's website*, and *research and investment recommendations*. *Personal contact with the investor relations team*, and *rating agencies* are less important and information from the *media* is not important at all.

[117]Measured by the median and the mean.

Asset Managers: Sources of Information During Investment
There seems to be a slide shift over the process of investing for equity asset managers regarding the sources of information. A *company's website* becomes less while *research and investment recommendations* become more important as informational source. Furthermore, *own research and models*, and *experience*, as well as *colleagues, competitors, suppliers and customers* gain in importance over time.

Also on the debt side a difference of sources before and during investment can be noticed. The *offering memorandum* quickly declines in importance. The most important sources are *personal contact to a company's treasury department and to senior management*. *Rating agencies* gain in importance becoming as important as the *annual report, website, and research and investment recommendations*. *Personal contact to the investor relations team* is not that important, while *media* information is not important at all.

B.3. Trust Levels

The respondents of the survey were asked to specify their general trust propensity, their opinion on whether investing is an act of trust, and their attitude regarding five stated forms of institutional trust, i.e. trust in the stock market, in general economic development, in large corporations, in government, and in (other) shareholders. The different trust forms were used in the interrelation analysis presented in subsection C.

General Trust Propensity of the Sample
The general trust propensity was measured following Guiso et al. (2008) by asking the same question as in the World Values Survey: "Generally speaking, would you say that most people can be trusted or that you have to be very careful in dealing with people?"[118]

Figure 16 shows that all six types of people—very careful to very trusting—can be found in the sample. The focus though lies in the middle, with a tendency towards the more careful people. The answer most often given was (+). In terms of two categories—*rather careful* and *rather trusting* people—the sample is quite balanced.

[118]See for further information Section VII A.1.

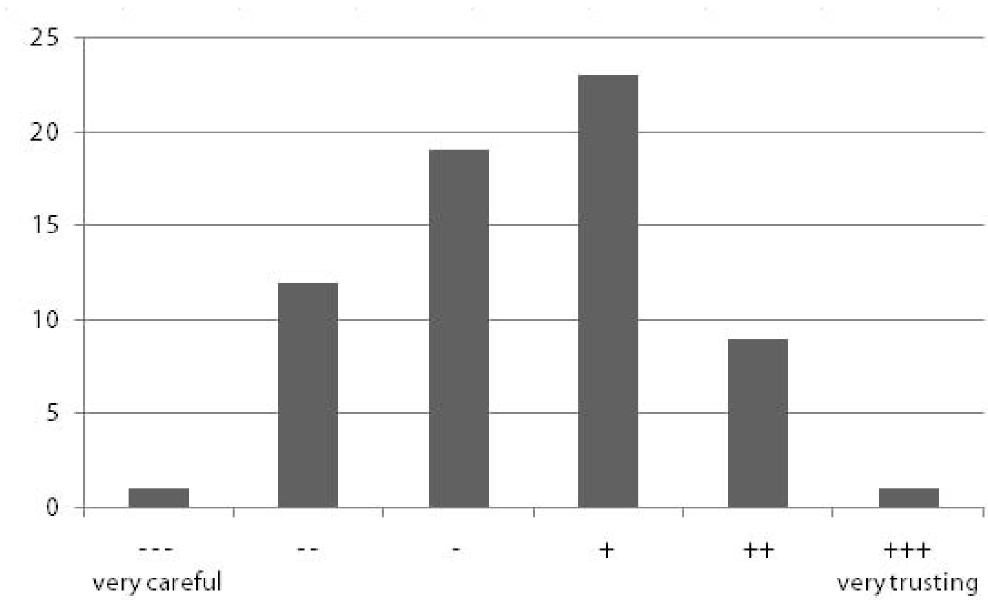

Figure 16. General Trust Propensity Distribution of the Sample. This figure depicts the distribution of responses regarding the general trust propensity of the survey participants with ratings possible on a six-point scale from "very careful" (- - -) to "very trusting" (+++).

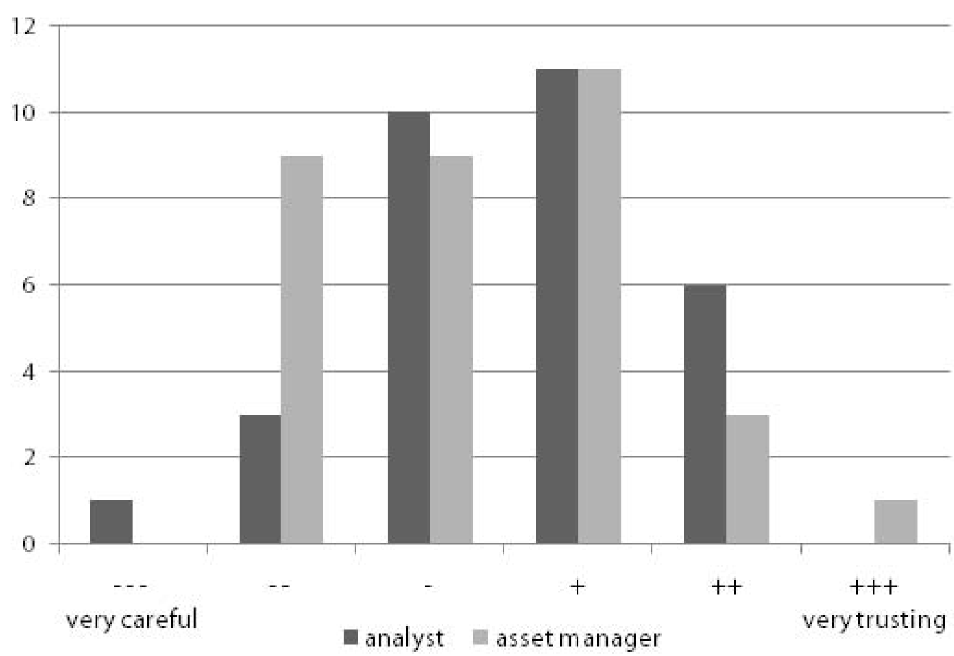

Figure 17. General Trust Propensity of Analysts and Asset Managers. This figure compares the distribution of responses regarding the general trust propensity of analysts and asset managers with ratings possible on a six-point scale from "very careful" (- - -) to "very trusting" (+++).

Asset managers and analysts are not significantly different in their general attitude towards trust. On viewing the distribution of answers (see Figure 17), the only thing worthy of notice is that the outliers for asset managers are on the very trusting end of the scale, while for analysts they appear at the opposite end.

As far as debt and equity investors are concerned, the former are clearly on the more careful side. They have no rating above (+).

Attitude Towards Investing

Generally, those sampled exhibit a diverse range of opinions concerning whether investing in a company may be seen as an act of trust. However, the majority (85%) of the respondents express a positive attitude with the median being (++), see Figure 18. The remaining 15% do not agree that investing is an act of trust.

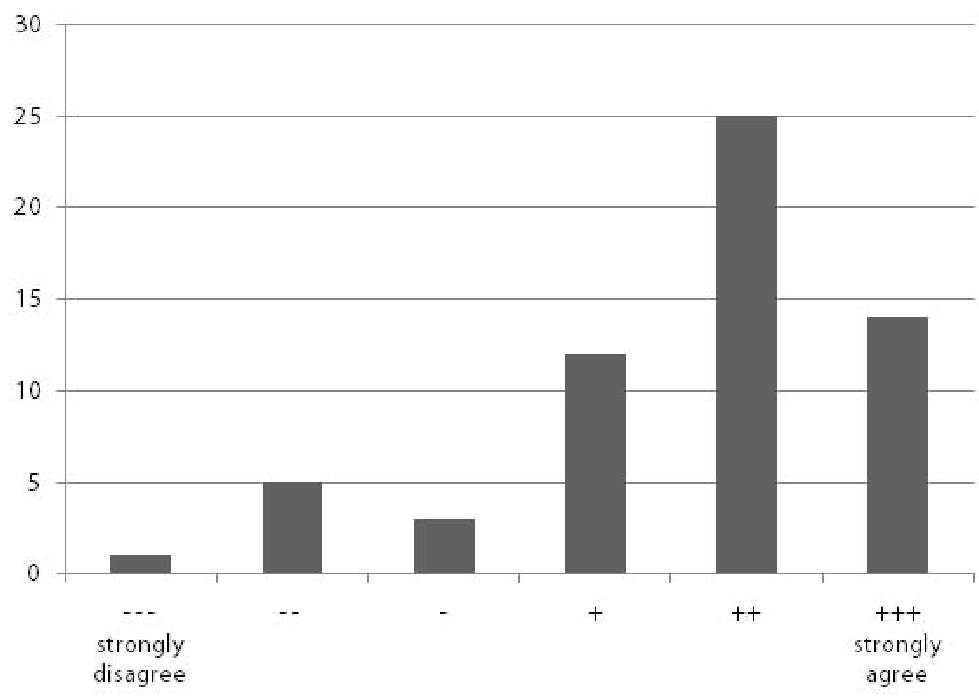

Figure 18. Perceiving Investing as an Act of Trust. This figure depicts the distribution of responses regarding the question whether investing is perceived as an act of trust with ratings possible on a six-point scale from "very careful" (- - -) to "very trusting" (+++).

There is no statistically significant difference in opinion between analysts and asset managers but the distribution does reveal that asset managers see investing more as an act of trust than analysts do.

The ten debt investors are completely on the positive side, i.e. they all agree that investing is an act of trust.

The Impact of Trust on Investing

One question was posed in order to check for the potentially stabilizing effect of established trust in the presence of negative signals. Figure 19 shows that according to the respondents established trust seems to have a stabilizing effect. 79% of the 42 respondents said that they would not sell their stock owing to rumor, 60% would not sell owing to external analysts' negative expectation, and 52% would not sell owing to negative news or announcements. Faced with a significant stabilization of the stock price or underperformance, up to 14% would not sell. The question concerning downgrading by a rating agency was only put to debt investors. If this were to occur 60% of the respondents said that they would not sell. The results confirm the analysis of institutional investors and trust done by Ferber (2004).

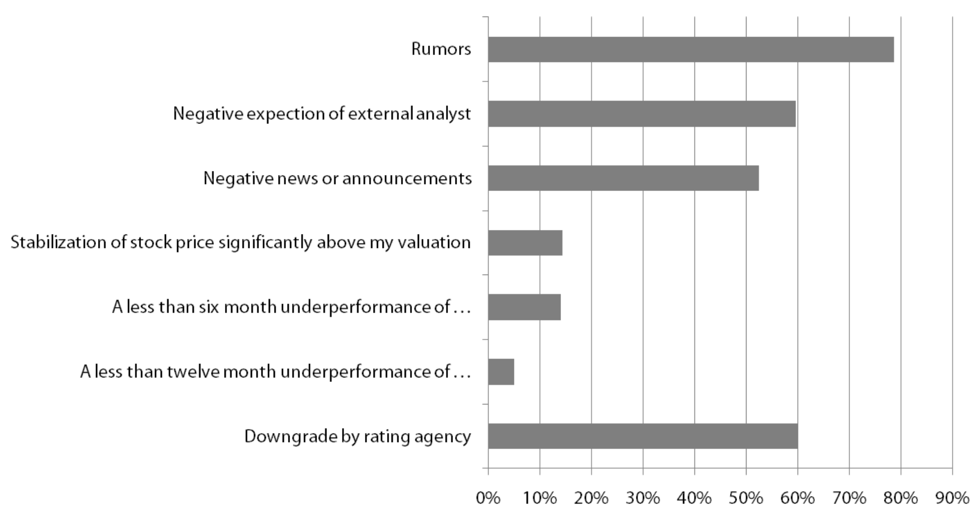

Figure 19. Stabilizing Effect of Trust. This figure shows the percentage of respondents who would not sell their investment in the case of the given signal, once they have established trust in a firm.

Facets of Institutional Trust

Table II presents the five different forms of institutional trust that the survey participants were asked to evaluate. Responses were possible on a six-point scale from "I do not trust at all" (- - -) to "I trust completely" (+++).

The sample results reveal the presence of considerable confidence in the eco-

Table II
Attitude Towards Forms of Institutional Trust

This table shows the attitude of the respondents regarding different forms of institutional trust rated on a six-point scale from “I do not trust at all” (- - -) to “I trust completely” (+++).

Institutional trust	Mean	Median	Distribution
economic development	3.74	4	All six categories exploited; focus on (+).
stock market	3.58	4	All six categories exploited; focus from (–) to (++).
large corporations	3.57	4	No complete trust (+++); strong focus on (-) to (++).
shareholders	3.16	3	No complete trust (+++); focus on (–) to (+).
government	2.75	3	No complete trust (+++); strong focus on the negative categories.

nomic development, the stock market, and large corporations. Shareholders and the government are looked at with a bit more caution. Interestingly, there is more overall confidence in systems (economy and market) than in situations where people are perceived to be more concretely involved (corporations, shareholders, government). For the latter three categories there is no complete trust expressed by the respondents.

There are no statistically significant differences of opinion between asset managers and analysts, nor between debt and equity investors regarding institutional trust. However, asset managers do tend to be slightly more trusting than analysts.

B.4. Reasons to Recommend or Invest in Holcim

The question on the reasons that speak for an investment in Holcim was posed in two slightly different ways. The analysts were asked why they would *recommend* Holcim, whereas the current investors were asked why they are *holding Holcim* in their portfolios. For further investigations the two questions were merged to see which were generally the most important reasons speaking for Holcim.

Figure 20 shows the relative response frequencies of importance to the various options available. The reasons for investing in Holcim covered in the survey were: *rating*, *industry*, *general strategy*, *geographic exposure & positioning*, *operations and organizational structure*, *financials*, *dividend policy*, *risk & return*, *senior management*, *corporate governance*, *reputation, recommendations*, *success in the past*, *future potential*, *sustainability or other ethical aspects*, *com-*

munication policy, and *momentum*.[119]

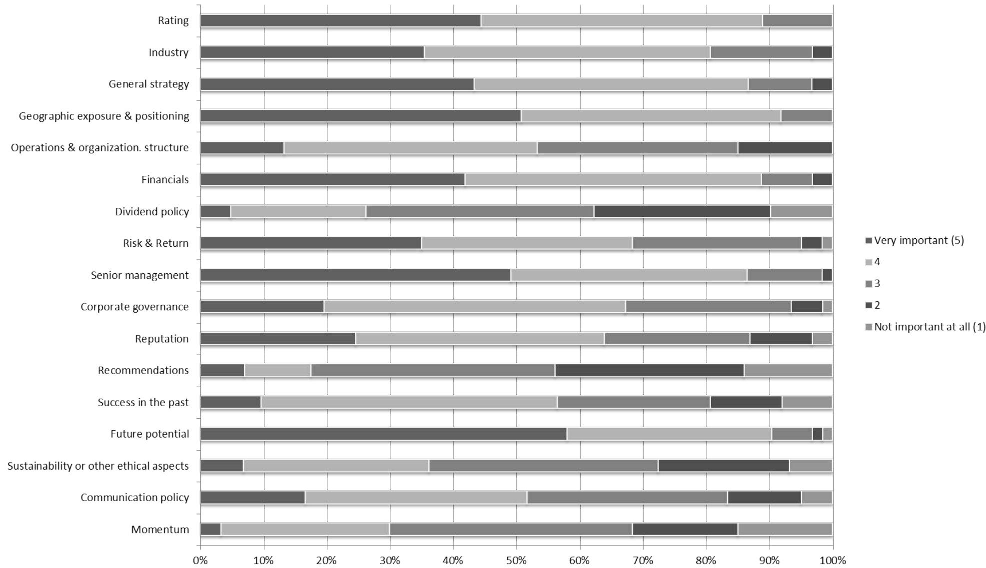

Figure 20. Reasons to Hold or Recommend Holcim. This figure presents the relative response frequencies concerning the reasons for investing in Holcim, from "very important" (5) to "not important at all" (1). Percentages refer to the number of responses per category. The evaluation of *rating* was only put to debt investors.

Generally it can be said that all the given reasons are quite important for the sample participants. On average—measured by the median—no score is less than three.

- Very important—with a median score of 5—are *geographic exposure & positioning* and the *future potential* of Holcim.

- Important—with a median score of 4—are *rating*, *industry*, *general strategy*, *operations & organizational structure*, *financials*, *risk & return relationship*, *senior management*, *corporate governance*, *reputation*, *success in the past*, and *communication policy*.

- Not so important—with a median score of 3—are *dividend policy*, *recommendations*, *sustainability or other ethical aspects*, and *momentum*.

It is quite interesting that the topic of *sustainability*, despite its ostensible importance for Holcim, does not appear highly relevant for investors. The correlation matrix (see Table III) provides further insight concerning interrelationships between reasons.[120]

[119]The response options were randomized.
[120]The non-parametric correlations can be found in the appendix.

Table III
Pearson Correlations Concerning Reasons for Investing in Holcim

This table shows the Pearson correlations concerning the reasons that speak for an investment in Holcim. * denotes significant at 5%, ** denotes significant at 1%.

	Pearson Correlations																
	A.	B.	C.	D.	E.	F.	G.	H.	I.	J.	K.	L.	M.	N.	O.	P.	Q.
A. Rating	1																
B. Industry	.550	1															
C. General strategy	-.060	.312*	1														
D. Geographic exposure	.060	.092	.186	1													
E. Operations & Organizations	.060	.226	.056	.183	1												
F. Financials	-.100	.053	.489**	.185	.251	1											
G. Dividend policy	-.158	.140	.309*	.066	.239	.258*	1										
H. Risk & Return	-.316	-.113	-.054	.046	.224	.237	.340**	1									
I. Senior management	.632	.190	.244	.051	.200	.255	.069	.059	1								
J. Corporate governance	.350	.124	.199	.096	.294*	.085	.320*	.033	.495**	1							
K. Reputation	.350	.245	.088	-.038	.006	-.008	.235	-.152	.346**	.589**	1						
L. Recommendations	.598	.105	.253	-.001	.025	-.073	.288*	-.088	.078	.364**	.517**	1					
M. Success in the past	.316	.049	-.092	.218	.064	-.084	.008	-.148	.230	.290*	.256*	.062	1				
N. Future potential	.060	.068	.027	.451**	.122	.198	-.019	.218	.269*	.024	.030	.079	.164	1			
O. Sustainability	.458	.136	.321*	.301*	.115	.066	.268*	-.022	.084	.258	.184	.471**	.026	.281*	1		
P. Communication policy	.060	.197	.020	.244	.099	.067	.129	-.096	.244	.249	.393**	.103	.210	.193	.311*	1	
Q. Momentum	.158	.264*	.015	.075	.250	-.035	-.163	-.205	.074	-.026	.115	.006	.248	.189	.075	.266*	1

It turns out that *geographic exposure & positioning* is one of the two most important reasons, and statistically significantly correlated with the other most important reason *future potential* but also with *sustainability*. *Future potential* is further correlated with *senior management* and *sustainability* as well. *Sustainability* is especially strongly correlated with *recommendations* and also with more tangible factors such as *strategy*, *geographic exposure & positioning*, and *dividend policy*. Besides with *future potential*, *senior management* is further correlated strongly significantly with *corporate governance* and *reputation*. Finally, *reputation* is correlated with *senior management* and *corporate governance*, *recommendations*, *success in the past*, and *communication policy*.

Thus, even though *sustainability* appears, in terms of its median score to be relatively unimportant for investors, the correlation analysis reveals that those people who appraised *geographic exposure & positioning* and *future potential* as important, also saw *sustainability* as relevant for Holcim, and those who believed in the *future potential* of the firm, also rated the *senior management* and *sustainability* as important.

Further, I would like to mention here *reputation* which is strongly associated with *senior management*, *corporate governance*, *recommendations*, *success in the past*, and *communication policy*. This could be an indication what factors feed into the establishment of reputation.

On looking at so-called "hard" and "soft" reasons, A.–H. and I.–Q. in Table III respectively, the highest positive correlations are found among the latter group but often both are mentioned to be important. For example, *strategy* is positively correlated with *financials* but also with *sustainability*. Another example is *dividend policy* which is positively correlated with *strategy*, *risk & return*, *corporate governance*, and *sustainability*.

Furthermore, I checked on differences between the groups debt and equity investors by doing a chi-square test. The results can be seen in Table IV. The opinions of sampled debt and equity investors diverge somewhat concerning what is important for investing in Holcim. For debt investors *general strategy*, *dividend policy*, *corporate governance*, *recommendations*, and *success in the past* are statistically significantly more important than to equity investors. The *future potential* is important for both groups but relatively more important to equity investors. Furthermore, *geographic exposure & positioning* and *sustainability or other ethical aspects* are also more important to equity than to debt investors.

Table IV
Importance of Reasons for Holcim to Debt and Equity Investors

This table shows perceived importance of respective reasons to invest in Holcim. Based on a chi-square test and using Cramer's V as measure of strength.

Reasons to Invest for Debt- and Equity-Investors	Cramér's V	Sign.
Industry	0.110	0.930
General strategy	0.396	0.032
Geographic exposure & positioning	0.280	0.084
Operations & organizational structure	0.120	0.839
Financials	0.164	0.689
Dividend policy	0.559	0.002
Risk & Return	0.286	0.328
Senior management	0.159	0.739
Corporate governance	0.386	0.072
Reputation of the company	0.311	0.197
Recommendations	0.467	0.018
Success in the past	0.378	0.063
Future potential	0.404	0.063
Sustainability or other ethical aspects	0.356	0.097
Communication policy	0.205	0.672
Momentum	0.281	0.281

Figure 21 shows overall agreement regarding investment reasons.

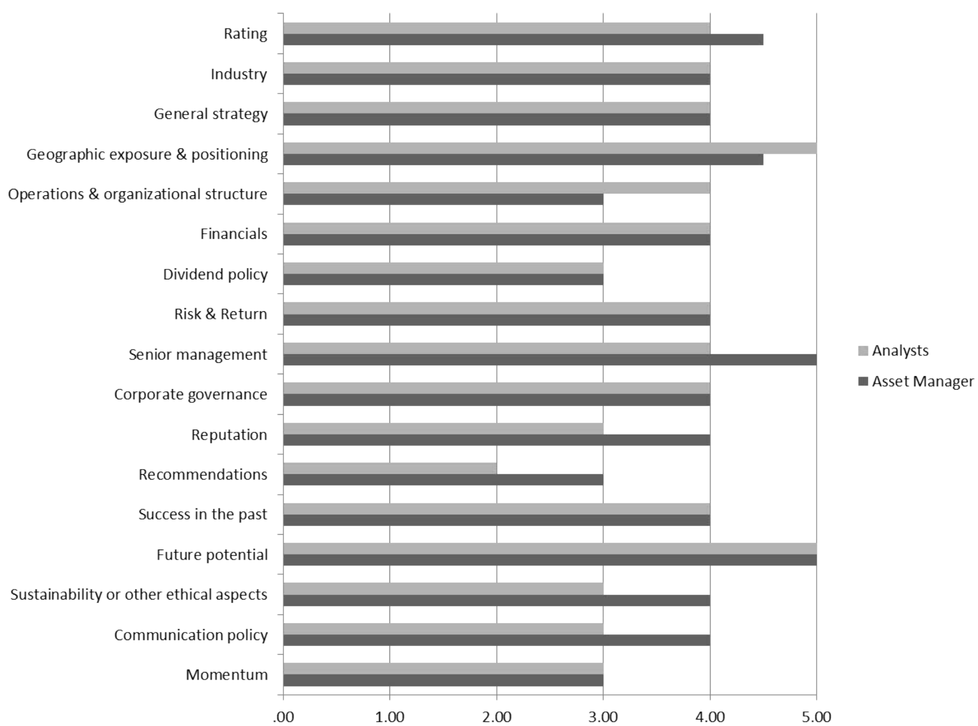

Figure 21. Reasons for Analysts and Asset Managers to Recommend or Hold Holcim. This figure compares the opinion of analysts and asset managers on reasons to recommend or hold Holcim as an investment.

As Figure 21 shows, the "softer" factors such as *communication policy*, *sustainability or other ethical aspects*, *recommendations*, *reputation*, and *senior management* are a little more important for asset managers than for analysts (measured by the median). In contrast, *operational structure* and *geographic exposure & positioning* are relatively more important reasons for analysts.

Cross-tab analysis confirms these differences and shows at a statistically significant level, that *reputation* and *sustainability and other ethical aspects* are more important to asset managers than to analysts. In contrast, *momentum* is more important to analysts than to asset managers.[121]

B.5. Investors' Relationship to Holcim

Table V summarizes the most important features of the relationship between the participants of the survey and Holcim.

Table V
Sample Characteristics Regarding the Relationship to Holcim

Characteristics	Description	Details or Remarks
Investment status	70% of the asset managers are currently invested in Holcim. Of the 6 not currently holding, 4 were past investors.	Most hold Holcim 1-5 years in their portfolio, the range goes from 1-30 years and a 2.0-5.5% fraction. Only asset managers were asked.
Personal relationship	67% of the respondents cultivate a personal relationship with either the investor relations team, the senior management, or the treasury team.	The asset managers tend to focus on the contact with the management, whereas more analysts relate to the IR team. Personal contact is more important for equity than debt holders.
Past experience	14% of the respondents admit having been disappointed by Holcim.	Reasons for disappointment are mostly unmet financial targets or expectations. Two mentioned issues on disclosure.
Consequences of disappointment	- 5 did not take any action - 7 sold their investment - 3 told IR - 2 told the management - 5 changed their recommendation	
News perception	Most of the respondents heard mostly positive (80%), 15% mostly negative, 5% only positive news about Holcim.	The questions referred to the perception of news over the preceding twelve months.
Information missing	15 of 75 respondents have a request for further information.	

[121] All three reasons are statistically significant at a 90% significance level, and have a Cramér's V of more than 0.362.

Most of the asset managers (over 80%) are current or past investors of Holcim. Sample participants cultivate quite a strong personal relationship with the firm. Concordant with the view of Holcim, more people are in contact with the investor relations team than directly with the senior management. Nevertheless, contact with the latter is still important. Altogether, the respondents have a positive attitude towards the firm, regarding both the news perceived during the last twelve months, and the level of disappointment with the firm in the past. 20% of the respondents request further informational details of the firm. This points to some room for further improvement.[122]

B.6. Perception of Holcim's Trustworthiness

The questions on the perception of Holcim's trustworthiness are from core of the questionnaire. Two questions can be used to measure the perceived overall trustworthiness and eleven other questions measure the components of trustworthiness: i.e *competence* (three items), *integrity* (five items), and *goodwill* (three items). The precise content of every item used for evaluation can be found in Table VI.

Table VI
The Components of Trustworthiness and Their Items

This table shows the components of trustworthiness with all their sub-items.

Component	Item	
	Variable	Item-Description
Trustworthiness	Trust-F	I trust Holcim to take care of its investors.
	Trust-M	I trust Holcim's management.
Competence	Compet-A	I feel very confident about the skills of Holcim as a firm.
	Compet-B	Holcim's management has the ability to accomplish what it says it will do.
	Compet-C	The company is known to be successful at the things it plans to do.
Integrity	Integ-A	I perceive to be treated fairly and justly by Holcim.
	Integ-B	I know I can rely on Holcim to keep its promises.
	Integ-C	The behavior of the people that work for Holcim seems to be guided by sound principles.
	Integ-D	Holcim does not mislead any of its stakeholders.
	Integ-E	I am sure that information which is relevant for me is honestly conveyed by Holcim.
Goodwill	Good-A	Whenever decisions are taken I know Holcim's management is concerned about its investors.
	Good-B	Investors' opinion is taken into account when Holcim is making decisions.
	Good-C	This company is interested in the well-being of its investors, not just itself.

[122] The information requests were discussed with the investor relations team and have in part already been implemented.

As Figure 22 shows Holcim is generally perceived very positively. In fact, respondents only used the positive side of the six-point scale from strongly disagree (- - -) to strongly agree (+++). The analysis was therefore confined to a three-point scale and focused on the difference between very strong (+++) and not so strong (+) agreement with the statements. The response options were randomized.

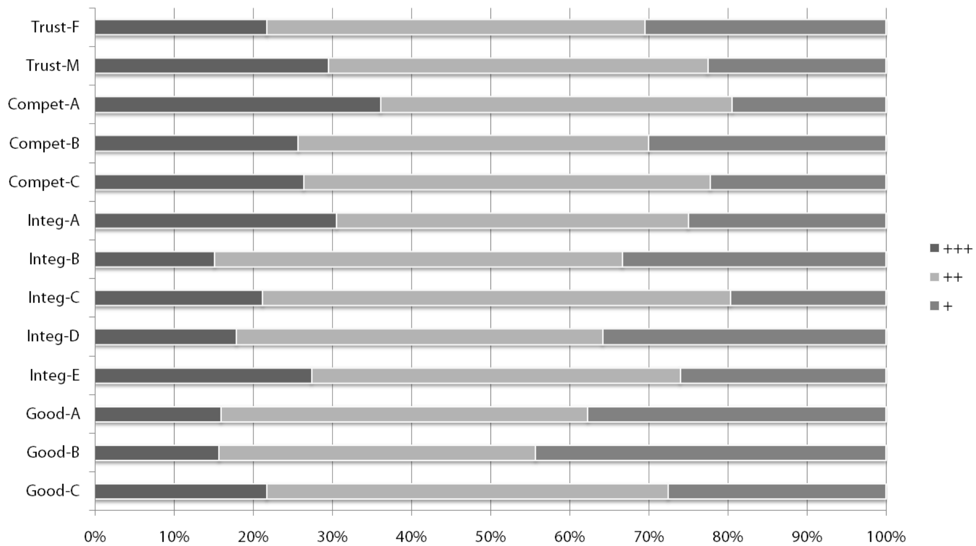

Figure 22. Investors' Perception of the Components of Trustworthiness. This figure presents the relative response frequencies regarding the overall perceived trustworthiness of the firm (Trust-F), its management (Trust-M), and the components competence, integrity, and goodwill (for precise content of each component see Table VI). Percentages refer to number of responses per one of the three category of agreement, where (+++) indicates strongest agreement.

Overall trustworthiness is measured by two items which focus on two different aspects of trust in a firm: variable Trust-A describes the perceived trustworthiness of a firm in general, whereas variable Trust-B moves the trustworthiness of the management of a firm to the center of attention. Holcim's management is perceived as being slightly more trustworthy than the firm in general.

B.7. Perception of Holcim's Transparency Effort

The analysis of Holcim's transparency effort was split into two parts: communication and information policy. Three statements appraise the perception of overall transparency (Transp-A–Transp-C). Perceived overall transparency is assumed to be made up of four components: *substantial information*, *participation*, *accountability*, and *secretiveness*, as a reverse item for *openness*. The precise content of every item evaluated can be found in Table VII.

Table VII
The Components of Transparency and Their Items

This table shows the components of transparency with all their sub-items.

Component	Item	
	Variable	Item-Description
Transparency	Transp-A	Holcim's management wants to understand how its decisions affect its investors.
	Transp-B	Holcim's management wants to be accountable to its investors for its actions.
	Transp-C	Holcim wants its investors to know what it is doing and why it is doing it.
Participation	Partic-A	I am asked for feedback about the quality of the information provided by Holcim.
	Partic-B	Holcim involves people like me to help identify the information investors need.
	Partic-C	I am asked for my opinion before decisions are taken.
Accountability	Account-A	Holcim presents more than one side of controversial issues.
	Account-B	Even information that might be damaging to the company is provided.
	Account-C	Holcim's management is open to criticism.
	Account-D	Mistakes are freely admitted.
	Account-E	Bad news is provided in a timely fashion.
Secretiveness	Secret-A	Often important informational details are left out.
	Secret-B	Holcim is slow in providing information to its investors.
	Secret-C	Holcim only discloses information when it is required to do so.
Substantial info	Info-D	is useful
	Info-E	is relevant to me
	Info-F	is detailed
	Info-G	arrives in a timely fashion
	Info-H	is complete
	Info-I	can easily be understood
	Info-J	is accurate
	Info-K	is reliable
	Info-L	can easily be found
	Info-M	is consistent throughout different sources of information
	Info-N	can be compared to previous performances
	Info-O	can be compared to industry standards
	Info-P	tells only part of the story
	Info-Q	seems to be intentionally written in a difficult way to understand

The first part of the analysis of transparency concerned the interactive dimension of transparency, the communication policy. Here, three items focused on *participation*, five on *accountability*, and three on *secretiveness*. As this topic is very important to investors, I extended the component *substantial information* compared to the original model of Rawlins (2008). It here consists of fourteen items. These are described in the second part of the transparency analysis, the information policy. The response options were randomized.

Communication Policy

Figure 23 shows that survey participants generally have a positive view of Holcim's communication policy. The "positive" evaluation of *secretiveness* (as reverse item of openness) is particularly noticeable. The correlation analysis in subsection C provides further insight on this aspect.

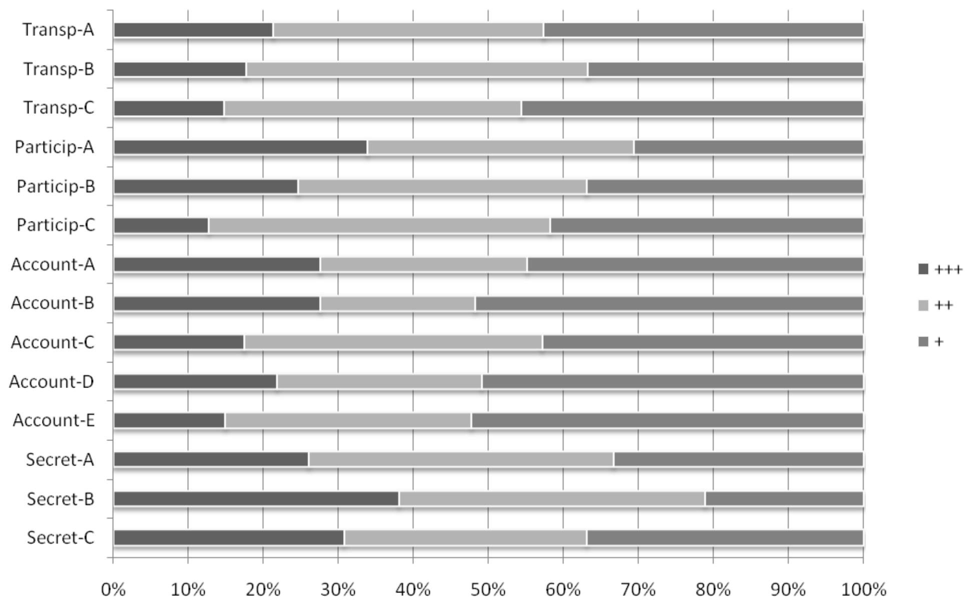

Figure 23. Investors' Perception of the Communication Policy. This figure presents the relative response frequencies regarding overall transparency (Transp-A–Transp-C) and the different components of the communication policy of a firm, participation, accountability, and secretiveness (for precise content of each component see Table VII). Percentages refer to number of responses per category of agreement, where (+++) indicates strongest agreement.

Information Policy

Figure 24 shows that survey participants generally agree with the statements concerning Holcim's information policy. There is clear support concerning the first twelve statements but some doubts concerning the last two statements "tells only part of the story" and "is difficult to understand". The correlation analysis in subsection C provides further insight on this aspect.

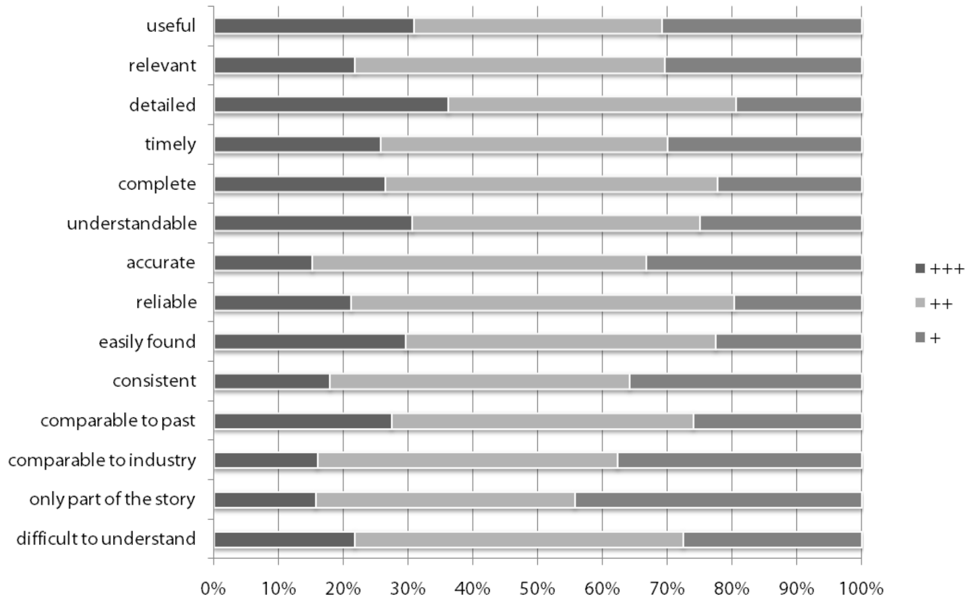

Figure 24. Investors' Perception of the Information Policy. This figure presents the relative response frequencies regarding the different items of Holcim's information policy (for precise content of each item see Table VII). Percentages refer to number of responses per category of agreement, where (+++) indicates strongest agreement.

B.8. Summing Up

The relationship of the sampled investors to Holcim can be summarized as follows: Both "hard" and "soft" factors are important for the respondents when deciding whether to invest or recommend Holcim. Altogether, the most important factors speaking for an investment in Holcim are *geographic exposure & positioning* and *future potential*. This is very clear and mainly driven by equity investors. Asset managers tend to rank "softer" reasons as being more important than do analysts. The correlation analysis revealed that *sustainability* is significantly related to both *geographic exposure & positioning* and *future potential*, and the latter in turn to the *senior management* of the assessed firm.

It is also of interest to see that *reputation* as a reason for investment is related to the factors *senior management*, *corporate governance*, *recommendations*, *success in the past*, and *communication policy*.

Concerning the different forms of trust, i.e. the general trust propensity of a person, the general attitude towards investing as an act of trust, and the five different forms of institutional trust namely, trust in the stock market, large corporations, the government, the economy, and shareholders, sample responses reveal that generally, the sample consists of quite a balanced group, ranging from rather wary to rather trusting people, with the focus lying in the middle of the six categories. The debt investors tend to be more wary compared to the equity investors, whereas analysts and asset managers do not show any relevant differences.

The sampled investors' general trust propensity is lower than referring to trust in the context of investing. 85% of the respondents see investing as an act of trust. The debt investors and the asset managers agree more on investing being an act of trust than the equity investors and analysts do. Moreover, according to the sample, once established, trust in a firm plays a stabilizing role.

Regarding the five different forms of institutional trust respondents are slightly less positive. There is most confidence in economic development, followed by the stock market, whereas large corporations, shareholders, and the government receive a slightly less positive evaluation.

In sum, Holcim receives a very positive investors response regarding its trustworthiness and its transparency effort, although there is some room for improvement in the latter.

C. Interrelationship Between Different Forms of Trust, the Perception of Trustworthiness, and Transparency Effort

The goal of the interrelationship analysis was to be able to answer three questions: The primary question concerned checking for the existence of an association between overall perceived trustworthiness and the perceived components of trustworthiness and transparency. The second question referred to whether there is an interrelationship between different other forms of trust and the trustworthiness specifically perceived for Holcim. And finally, the third question asked whether investor and relationship characteristics influence the interrelationship between the perception of trustworthiness and transparency. The following subsection C.1 describes the main final model, working with aggregated components.

Before working with the aggregated components, I checked the correlation of all sub-items with their components and with the perception of overall trustworthiness and transparency. This detailed analysis was done first and foremost to test whether the components and their sub-items as derived from the literature review are also applicable to the investment relationship and further, owing to the rather modest sample size, as an overall plausibility check. Some interesting additional results were revealed. These are presented in subsection C.2.

Further, a correlation analysis concerning the various forms of trust was also done but as this did not provide significant results, the variables were omitted from the final model. The results of this correlation analysis can be found in subsection C.3.

C.1. Main Model

Before starting the analysis on an interrelation between the concepts of trustworthiness and transparency the data on the different components was aggregated. All items belonging to a certain component of trustworthiness or transparency were merged by taking the mean score of the available ranking, from a scale of 1 (- - -) to 6 (+++), where 1 means "strongly disagree" and 6 "strongly agree". Where responses were incomplete, I calculated the mean on the basis of the answers given in order not to lose observations.

Thus, overall trustworthiness is given by the mean of two items—trustworthiness of the firm in general and trustworthiness of the management—and by the components of trustworthiness which are *competence* (3 items), *integrity* (5 items), and *goodwill* (3 items). The same aggregation was performed with overall transparency (3 items), and the components of transparency, namely, *substantial information* (14 items), *participation* (3 items), *accountability* (5 items), and *secretiveness* (3 reverse items of openness). The precise content of all the different items of the components can be seen in Table VIII below.

I first performed a correlation analysis with the aggregated data, followed by a regression analysis. The general goal was to explain overall trust in the firm. As my model suggests that this trust comprises trust in the firm in general and trust in the management, the regression analysis also looked at potential differences regarding the perception of these two items.

Table VIII
The Components of Trustworthiness and Transparency and Their Items

This table shows the components of trustworthiness and transparency with all their sub-items.

Component	Item	
	Variable	Item-Description
Trustworthiness	Trust-F	I trust Holcim to take care of its investors.
	Trust-M	I trust Holcim's management.
Competence	Compet-A	I feel very confident about the skills of Holcim as a firm.
	Compet-B	Holcim's management has the ability to accomplish what it says it will do.
	Compet-C	The company is known to be successful at the things it plans to do.
Integrity	Integ-A	I perceive to be treated fairly and justly by Holcim.
	Integ-B	I know I can rely on Holcim to keep its promises.
	Integ-C	The behavior of the people that work for Holcim seems to be guided by sound principles.
	Integ-D	Holcim does not mislead any of its stakeholders.
	Integ-E	I am sure that information which is relevant for me is honestly conveyed by Holcim.
Goodwill	Good-A	Whenever decisions are taken I know Holcim's management is concerned about its investors.
	Good-B	Investors' opinion is taken into account when Holcim is making decisions.
	Good-C	This company is interested in the well-being of its investors, not just itself.
Transparency	Transp-A	Holcim's management wants to understand how its decisions affect its investors.
	Transp-B	Holcim's management wants to be accountable to its investors for its actions.
	Transp-C	Holcim wants its investors to know what it is doing and why it is doing it.
Participation	Partic-A	I am asked for feedback about the quality of the information provided by Holcim.
	Partic-B	Holcim involves people like me to help identify the information investors need.
	Partic-C	I am asked for my opinion before decisions are taken.
Accountability	Account-A	Holcim presents more than one side of controversial issues.
	Account-B	Even information that might be damaging to the company is provided.
	Account-C	Holcim's management is open to criticism.
	Account-D	Mistakes are freely admitted.
	Account-E	Bad news is provided in a timely fashion.
Secretiveness	Secret-A	Often important informational details are left out.
	Secret-B	Holcim is slow in providing information to its investors.
	Secret-C	Holcim only discloses information when it is required to do so.
Substantial info	Info-D	is useful
	Info-E	is relevant to me
	Info-F	is detailed
	Info-G	arrives in a timely fashion
	Info-H	is complete
	Info-I	can easily be understood
	Info-J	is accurate
	Info-K	is reliable
	Info-L	can easily be found
	Info-M	is consistent throughout different sources of information
	Info-N	can be compared to previous performances
	Info-O	can be compared to industry standards
	Info-P	tells only part of the story
	Info-Q	seems to be intentionally written in a difficult way to understand

Correlation Analysis

Table IX exhibits a high and positive correlation between overall trustworthiness and its components. Overall transparency is less strongly positively correlated with its components. This is also confirmed by the analysis of the non-aggregated items (see Table XIV in subsection C.2.). The highest positive and statistical significance was found for the component *substantial information*, followed by the component *integrity*. *Participation* is not significant, exhibiting almost no positive if not negative correlations. This confirms that Holcim's investors do not associate participation with transparency.

Table IX
Pearson Correlations of Trustworthiness, Transparency, and Their Components

This table shows the Pearson correlations between overall trustworthiness and its components and transparency and its components. * denotes significant at 5%, ** denotes significant at 1%.

Pearson Correlations									
Components	A.	B.	C.	D.	E.	F.	G.	H.	I.
A. Trustworthiness	1								
B. Competence	.544**	1							
C. Integrity	.605**	.448**	1						
D. Goodwill	.542**	.470**	.416**	1					
E. Transparency	.364**	.149	.300*	.418**	1				
F. Subst. info.	.630**	.464**	.442**	.495**	.341**	1			
G. Participation	.037	.035	.189	-.020	.168	-.009	1		
H. Accountability	.285*	.156	.360**	.199	.274*	.281*	.301*	1	
I. Secretiveness	-.376**	-.260*	-.276*	-.353**	-.350**	-.337**	.008	-.101	1

Regression Analysis

The starting point of the regression analysis was to look at the relationship between trustworthiness and its components, transparency and its components, and then trustworthiness and transparency, applying a stepwise procedure (see model description in Table X).

The first model (in Table X 1. TRUSTWORTHINESS) with the three components of trustworthiness performed best and was able to explain almost 50% of the variance. However, although *competence* is highly correlated with overall trust, the regression analysis demonstrates that *integrity* and *goodwill* contribute the most to the perceived overall trustworthiness, while *competence* is not a significant contributor.

The next best model, explaining for 35% of the variance, is the third one (in Table X 3. TRUSTWORTHINESS). There I looked at the relationship between overall trustworthiness and the components of transparency. For both trustworthiness (in Table X 3. TRUSTWORTHINESS) and transparency (in Table X 2. TRANSPARENCY) the only component that makes a significant contribution is *substantial information*. *Substantial information* is also significantly important for all components of trust (Models 4–6). *Accountability* is an important contributor with respect to *integrity*, as is *openness* for *goodwill*. However, these models are rather weak in terms of adjusted R^2.

Table X
Regression of Trustworthiness, Transparency, and Their Components

This table shows the regression results of overall trustworthiness, transparency, and their components with a stepwise procedure applied. * denotes significant at 5%, ** denotes significant at 1%.

Models		Beta	t	Adj. R^2	Obs.
1. TRUSTWORTHINESS				0.481	72
	Competence	0.256	2.450		
	Integrity	0.368**	3.876		
	Goodwill	0.300**	2.658		
	Constant	0.430	0.770		
2. TRANSPARENCY				0.207	66
	Substantial information	0.481**	2.689		
	Participation	0.080	0.749		
	Accountability	0.186	1.436		
	Secretiveness	-0.195	-1.672		
	Constant	2.082	1.546		
3. TRUSTWORTHINESS				0.354	64
	Substantial information	0.858**	4.726		
	Participation	0.018	0.163		
	Accountability	0.146	1.074		
	Secretiveness	-0.184	-1.543		
	Constant	0.909	0.655		
4. COMPETENCE				0.202	66
	Substantial information	0.690**	3.626		
	Participation	-0.003	-0.023		
	Accountability	0.064	0.465		
	Secretiveness	-0.127	-1.021		
	Constant	1.961	1.369		
5. INTEGRITY				0.216	66
	Substantial information	0.487*	2.392		
	Participation	0.167	1.367		
	Accountability	0.253	1.710		
	Secretiveness	-0.210	-1.578		
	Constant	1.564	1.020		
6. GOODWILL				0.203	63
	Substantial information	0.531**	2.893		
	Participation	0.016	0.149		
	Accountability	0.018	0.134		
	Secretiveness	-0.269*	-2.297		
	Constant	3.406*	2.487		

In a second step I defined TRUSTWORTHINESS as the dependent variable, given by the mean score of the two statements "I trust Holcim to take care of its investors." (variable Trust-F) and "I trust Holcim's management." (variable Trust-M). If there was only one ranking for one of the items, this was taken as the overall perceived trustworthiness.

Table XI
Trustworthiness and Transparency Within an Investment Relationship

This table shows investor perceptions of trustworthiness and transparency components regressed on overall TRUSTWORTHINESS in Holcim. The component variables are formed by taking the mean score of the several items evaluated. All items included can be found in Table VIII. Stepwise, also characteristics of the investor—form of capital (debt or equity investors) and the job position (analyst or asset manager)—and of the relationship—past experience (occurred disappointment yes or no) and personal contact (relationship to investor relations, the treasury team or the senior management yes or no) are considered. Absolute values of t statistics are given in parentheses below the estimates. * denotes significant at 5%, ** denotes significant at 1%.

Variable	Models					
TRUSTWORTHINESS	1	2	3	4	5	6
Competence	0.193	0.182	0.188	0.171	0.167	0.223
	(1.574)	(1.783)	(1.832)	(1.698)	(1.418)	(1.981)*
Integrity	0.289	0.305	0.313	0.334	0.579	0.539
	(2.673)**	(3.312)**	(3.360)**	(3.639)**	(3.843)**	(3.782)**
Goodwill	0.205	0.200	0.212	0.190	0.056	0.069
	(1.555)	(1.794)	(1.872)	(1.700)	(0.427)	(0.562)
Transparency	0.064					
	(0.522)					
Substantial info.	0.428	0.485	0.489	0.505	0.335	0.239
	(2.114)*	(3.003)**	(3.0150)**	(3.163)**	(1.795)	(1.335)
Participation	-0.053					
	(-0.511)					
Accountability	0.071					
	(0.559)					
Secretiveness	-0.028					
	(-0.241)					
Equity			-0.109	-0.134	-0.213	-0.240
			(-0.708)	(-0.887)	(-1.277)	(-1.527)
Asset manager				0.191	0.199	0.295
				(1.987)*	(1.991)*	(2.938)**
Past experience					0.059	0.109
					(0.532)	(1.029)
Personal contact						-0.306
						(-2.716)**
Constant	-0.741	-0.788	-0.731	-0.972	-0.654	-0.105
	(-0.551)	(-1.183)	(-1.085)	(-1.438)	(-0.869)	(-0.143)
Observations	63	72	72	71	57	57
Adjusted R^2	0.465	0.536	0.533	0.553	0.590	0.637

This time I included all components of trustworthiness, evaluation of overall transparency, and the components of transparency as explanatory variables (see Table XI). Again, I applied a stepwise procedure but excluded from Model 2 on those components which did not contribute to the model. The second

model confirms: *integrity* and *substantial information* contribute significantly to overall trustworthiness, followed by *goodwill* and *competence*. From Model 2 on I also added specific control variables which help explain the relationship the investor has to the firm. These are "form of capital"[123], "position"[124], "past experience"[125], and "personal relationship"[126]. These four covariates were coded as dummy variables.
The inclusion of the relationship variables and investor characteristics (Models 3–6 shown in Table XI) resulted in the following:

- *Integrity* is the only variable that is robust to any changes in the model.
- The more relationship variables are added, the more *substantial information* loses in significance.
- *Competence* gains in significance, whereas *goodwill* declines in significance.
- Asset managers perceive Holcim as more trustworthy than analysts do.
- It does not significantly matter if the respondent is a debt or equity investor, but shareholders tend to have less overall trust than debt holders.
- Those who do not cultivate a personal contact to the firm, perceive Holcim as less trustworthy. This can only be shown in combination with the variable past experience.

The third step of the regression analysis was to look at differences in the perception of the trustworthiness of the firm in general (see Table XII), and of the perceived trustworthiness of the management (see Table XIII), the sum of which I defined earlier as being overall trustworthiness. The same procedure was applied as before and which was shown in Table XI, changing only the dependent variable first to trustworthiness of the firm (variable TRUST FIRM) and afterwards to trustworthiness of the management (variable TRUST MANAGEMENT).

It turns out that the perceived overall trustworthiness of the firm is primarily driven by the trustworthiness of the management. Most effects are the same as in the models 1 and 2. Perceived trustworthiness of the firm, especially for

[123] Where debt=0, equity=1.
[124] Where analyst=0, asset manager=1.
[125] Where disappointed by the firm in the past=0, no disappointment=1.
[126] Where a personal relationship to either the management, investor relations team, or the treasury team=0, no personal relationship=1.

the first models, is strongly associated with *goodwill*. But again, on adding the relationship variables, the importance of the *integrity* element returns also in the analysis of firm trustworthiness. The other interesting difference between model 1 and 2 is that, when looking at the trustworthiness of the firm, the debt versus equity view is more important than the job position. Here it can be said that equity investors significantly perceive Holcim as less trustworthy than debt investors do.

Table XII
Trustworthiness of the Firm and Transparency Within an Investment Relationship

This table shows investor perceptions of trustworthiness and transparency components regressed on the trustworthiness perceived of Holcim as a firm. The component variables are formed by taking the mean of the several items evaluated. All items included can be found in Tables VIII. Stepwise, also characteristics of the investor—form of capital (debt or equity investors) and job position (analyst or asset manager)—and of the relationship—past experience (occurred disappointment yes or no) and personal contact (relationship to investor relations, the treasury team or the senior management yes or no) are considered. Absolute values of t statistics are given in parentheses below the estimates. * denotes significant at 5%, ** denotes significant at 1%.

Variable	Models					
TRUST FIRM	1	2	3	4	5	6
Competence	0.205	0.128	0.151	0.150	0.059	0.128
	(1.141)	(0.869)	(1.033)	(1.018)	(0.320)	(0.692)
Integrity	0.128	0.173	0.196	0.204	0.676	0.633
	(0.829)	(1.312)	(1.495)	(1.541)	(2.862)**	(2.715)**
Goodwill	0.521	0.548	0.584	0.550	0.293	0.307
	(2.533)**	(3.237)**	(3.462)**	(3.187)**	(1.318)	(1.404)
Transparency	0.223					
	(1.164)	0.250				
Substantial information	0.181	0.305	0.328	0.363	0.192	0.059
	(0.576)	(1.265)	(1.374)	(1.496)	(0.622)	(0.189)
Participation	0.002					
	(0.014)					
Accountability	-0.045					
	(-0.242)					
Secretiveness	0.107					
	(0.631)					
Equity			-0.353	-0.372	-0.515	-0.548
			(-1.634)	(-1.704)	(-2.029)*	(-2.193)*
Asset manager				0.154	0.136	0.239
				(1.075)	(0.861)	(1.433)
Past experience					-0.047	-0.007
					(-0.269)	(-0.040)
Personal contact						-0.315
						(-1.660)
Constant	-1.508	-0.712	-0.562	-0.813	-0.259	0.447
	(-0.747)	(-0.722)	(-0.574)	(-0.803)	(-0.208)	(0.346)
Observations	60	69	69	68	54	54
Adjusted R^2	0.296	0.369	0.385	0.386	0.412	0.434

Table XIII
Trustworthiness of the Management and Transparency Within an Investment Relationship

This table shows investor perceptions of the components of trustworthiness and transparency regressed on trustworthiness of the management of Holcim. The component variables are formed by taking the mean of the several items evaluated. All items included can be found in Table VIII. Stepwise also characteristics of the investor—form of capital (debt or equity investors) and job position (analyst or asset manager)—and of the relationship — past experience (occurred disappointment yes or no) and personal contact (relationship to investor relations, the treasury team or the senior management yes or no) are considered. Absolute values of t statistics are given in parentheses below the estimates. * denotes significant at 5%, ** denotes significant at 1%.

Variable	Models					
TRUST MANAGEMENT	1	2	3	4	5	6
Competence	0.147	0.201	0.191	0.172	0.246	0.304
	(0.882)	(1.427)	(1.347)	(1.226)	(1.471)	(1.834)
Integrity	0.488	0.461	0.449	0.474	0.505	0.463
	(3.303)**	(3.604)**	(3.484**)	(3.698)**	(2.356)*	(2.208)*
Goodwill	-0.052	-0.070	-0.088	-0.109	-0.141	-0.126
	(-0.291)	(-0.453)	(-0.563)	(-0.700)	(-0.756)	(-0.690)
Transparency	-0.112					
	(0.665)					
Substantial Information	0.542	0.567	0.559	0.566	0.408	0.307
	(1.962)*	(2.514)*	(2.469)*	(2.511)*	(1.537)	(1.163)
Participation	-0.076					
	(-0.526)					
Accountability	0.085					
	(0.483)					
Secretiveness	-0.215					
	(-1.373)					
Equity			0.169	0.138	0.104	0.078
			(0.793)	(0.651)	(0.436)	(0.336)
Asset Manager				0.161	0.228	0.325
				(1.177)	(1.590)	(2.190)*
Past experience					0.155	0.209
					(0.982)	(1.337)
Personal contact						-0.317
						(-1.913)
Constant	1.080	-0.664	-0.748	-0.913	-0.802	-0.231
	(0.585)	(-0.718)	(-0.801)	(-0.961)	(-0.751)	(-0.213)
Observations	62	70	70	69	56	56
Adjusted R^2	0.349	0.399	0.395	0.403	0.379	0.412

As a fourth step I also included the other forms of trust. However, as the previous correlation analysis revealed, and as also shown in detail in subsection C.3 (see Table XIX), no significant influence could be found, except for a slight positive relation between the general positive attitude towards investing and the specific trustworthiness of Holcim.

C.2. Validation of The Model and Detailed Analysis of the Data

Before aggregating the various sub-items of one component by taking means, I first made a correlation analysis of all items and their components. This is now presented starting with the trustworthiness model and followed by the transparency model. The problem of multicollinearity is discussed at the end.

Trustworthiness and Its Components

To answer the question whether the components of trustworthiness relate to the perception of overall trustworthiness and to each other, I did a correlation analysis of all items of trustworthiness components. This showed that almost all of the items are significantly related to each other. Table XIV depicts the Pearson correlations for all components of trustworthiness.[127]

The different components of trustworthiness are all statistically significantly related at least at the 0.05 level with the two items of overall trust, except for the second *goodwill* item. The question of whether investor opinion is taken into account when Holcim is making decisions is not associated with trust. Actually, this is confirmed by the component *participation* in the analysis of transparency as can be seen below.

The strongest positive correlation with the perception of overall trustworthiness of the firm (Trust-F) with 0.675 is given by the third *goodwill* item (Good-C), i.e.: "This company is interested in the well-being of its investors, not just itself." The *integrity* items are also strongly related to the overall perceived trustworthiness of the firm, with three of them exhibiting correlations higher than or equal to 0.500.

The overall perceived trustworthiness of the management (Trust-M) is most highly correlated with the first *integrity* item (Integ-A with 0.543), i.e. investors belief that they are treated fairly and justly by Holcim. This is followed by the *integrity* item focusing on the reliance of Holcim to keep its promises. Finally, confidence in the skills of Holcim (Compet-A) is also highly related to the perceived trustworthiness of the management.

Altogether, the analysis shows that the items provide a good measure of the components of trustworthiness and trustworthiness itself.

[127] The non-parametric correlation analysis which can be found in the appendix gives very similar results. Only the second item of *goodwill* performs slightly better.

Table XIV
Correlation Analysis of the Components of Trustworthiness

This table shows the Pearson correlations for perception of overall trustworthiness of the firm (variable Trust-F), overall trustworthiness of the management (variable Trust-M), and the components of trustworthiness with their items respectively. Competence is given by the variables Compet-A–Compet-C, integrity is given by the variables Integ-A–Integ-E, and goodwill by the item variables Good-A–Good-C. * denotes significant at 5%, ** denotes significant at 1%.

	Pearson Correlations												
	T-F	T-M	C-A	C-B	C-C	I-A	I-B	I-C	I-D	I-E	G-A	G-B	G-C
Trust-F (T-F): I trust Holcim to take care of its investors.	1												
Trust-M (T-M): I trust Holcim's management.	.328**	1											
Compet-A (C-A): I feel very confident about the skills of Holcim as a firm.	.404**	.475**	1										
Compet-B (C-B): Holcim's management has the ability to accomplish what it says it will do.	.272*	.250*	.375**	1									
Compet-C (C-C): The company is known to be successful at the things it plans to do.	.287*	.310**	.518**	.379**	1								
Integ-A (I-A): I perceive to be treated fairly and justly by Holcim.	.538**	.543**	.427**	.330**	.328**	1							
Integ-B (I-B): I know I can rely on Holcim to keep its promises.	.504**	.540**	.431**	.309*	.189	.451**	1						
Integ-C (I-C): The behavior of the people that work for Holcim seems to be guided by sound principles.	.478**	.340**	.603**	.333**	.316*	.481**	.432**	1					
Integ-D (I-D): Holcim does not mislead any of its stakeholders.	.500**	.461**	.199	.383**	.290*	.469**	.356**	.293*	1				
Integ-E (I-E): I am sure that information which is relevant to me is honestly conveyed by Holcim.	.393**	.295*	.127	.215	.363**	.448**	.202	.269*	.596**	1			
Good-A (G-A): Whenever decisions are taken, I know Holcim's management is concerned about its investors.	.424**	.383**	.251*	.242*	.265*	.397**	.308*	.253*	.543**	.389**	1		
Good-B (G-B): Investors' opinion is taken into account when Holcim is making decisions.	.159	.115	.212	.227	.229	.233	.282*	.277*	.263*	.281*	.203	1	
Good-C (G-C): This company is interested in the well-being of its investors, not just itself.	.675**	.272*	.321**	.354**	.320**	.337**	.339**	.521**	.481**	.387**	.394**	.242*	1

Differences in Trustworthiness Perception of Debt and Equity Investors

The correlations of the trustworthiness components with the trustworthiness of the firm (Trust-F) is almost solely driven by the equity investors. Statistical significance for both debt and equity investors was found for *competence* (Compet-A) and *integrity* (Integ-B). When checking for potential differences in perception across the statements of the two groups, the cross-tab and chi-square analysis revealed, at least for some statements, that sampled equity investors place more trust in Holcim than the sampled debt investors (see Table XV).

Table XV
Differences in Perception for Debt and Equity

This table shows the different perceptions of trustworthiness items for debt and equity investors.

Components of Trustworthiness	Cramér's V	Sign.
Trust-M: I trust Holcim's management.	0.411	0.002
Compet-A: I feel very confident about the skills of Holcim as a firm.	0.258	0.082
Integ-E: I am sure that information which is relevant to me is honestly conveyed by Holcim.	0.495	0.000
Good-A: Whenever decisions are taken, I know Holcim's management is concerned about its investors.	0.286	0.067
Good-C: This company is interested in the well-being of its investors, not just itself.	0.284	0.056

Differences in Analyst and Asset Manager Perceptions of Trustworthiness

The correlations between overall perceived trustworthiness of the firm and the other trustworthiness components are mostly positive and statistically significant both for analysts and asset managers. With respect to the *competence* item, the positive correlation is only driven by analysts. On the contrary the *integrity* item "I am sure that information which is relevant to me is honestly conveyed by Holcim." (Integ-E) is only driven be the positive conviction of the asset managers in the sample.

Checking on where the positive correlations of the components of trustworthiness with perceived management trustworthiness (Trust-M) come from, there are some slight differences compared to the perceived trustworthiness of the firm in general (Trust-F). *Competence* (Compet-A) derives only from the equity side and *integrity* (Integ-A) comes from both debt and equity, referring to trust in the firm it comes solely from the equity side. Again, the *competence* variables are driven by the analysts and additionally, *integrity* (Integ-D) and (Integ-E), and *goodwill* (Good-A) and (Good-C).

The cross-tab and chi-square analysis do not show any significant differences with respect to analyst and asset manager perception.

Transparency and Its Components

The correlation matrix of overall transparency and its components and sub-items (see Table XVI) does not look as convincing as the analysis on trustworthiness. The positive evaluation of *secretiveness* mentioned already earlier is resolved as correlations are negative. However, *participation* and *accountability* are not clearly correlated with overall transparency. It seems that investors do not associate these items as transparency effort of the firm.

Clear confirmation was given for the following statement: "Holcim shows accountability by transmitting bad news or mistakes in time.", item *accountability* Account-E. And this *accountability* is also clearly related to the perception of overall transparency:

- The first indicator of overall transparency Transp-A—"Holcim's management wants to understand how its decisions affect its investors."—is significantly related to the fifth item of *accountability* Account-E.

- The second indicator of overall transparency Transp-B— "Holcim's management wants to be accountable to its investors for its actions."—is significantly negatively related to the second item of *secretiveness* Secret-B.

- The third indicator of overall transparency Transp-C—"Holcim wants its investors to know what it is doing and why it is doing it."—shows significant positive relation with the aforementioned item *accountability* Account-E.

- The latter point above is also confirmed by the analysis on *substantial information.*

Table XVI
Correlation Analysis of the Components of Transparency (Part Communication)

This table shows the Pearson correlations for perception of Holcim's communication policy, overall transparency (Transp-A–C), and the component participation with its sub-items Part-A–C, accountability with its sub-items Acount-A-E, and secretiveness with its sub-items Secret-A–C, respectively. * denotes significant at 5%, ** denotes significant at 1%.

	Pearson Correlations													
	T-A	T-B	T-C	P-A	P-B	P-C	A-A	A-B	A-C	A-D	A-E	S-A	S-B	S-C
Transp-A (T-A): Holcim's management wants to understand how its decisions affect its investors.	1													
Transp-B (T-B): Holcim's management wants to be accountable to its investors for its actions.	.206	1												
Transp-C (T-C): Holcim wants its investors to know what it is doing and why it is doing it.	.207	.324**	1											
Partic-A (P-A): I am asked for feedback about the quality of the information provided by Holcim.	-.056	-.005	.058	1										
Partic-B (P-B): Holcim involves people like me to help identify the information investors need.	.141	.195	.094	.451**	1									
Partic-C (P-C): I am asked for my opinion before decisions are taken.	-.267	.028	-.139	-.026	.105	1								
Account-A (A-A): Holcim presents more than one side of controversial issues.	.088	-.038	-.002	.182	.150	.389**	1							
Account-B (A-B): Even information that might be damaging to the company is provided.	.195	.027	.254	.049	.107	-.022	.205	1						
Account-C (A-C): Holcim's management is open to criticism.	.166	.082	.070	.299*	.332*	-.129	.210	.081	1					
Account-D (A-D): Mistakes are freely admitted.	-.025	-.154	-.119	.242	-.025	.069	.015	.057	-.033	1				
Account-E (A-E): Bad news is provided in a timely fashion.	.411**	.090	.343**	.228	.160	-.277	.111	.355**	.173	.145	1			
Secret-A (S-A): Often important informational details are left out.	-.109	-.163	-.197	-.029	-.098	-.249	.025	.002	-.021	-.032	-.232	1		
Secret-B (S-B): Holcim is slow in providing information to its investors.	-.051	-.434**	-.124	-.086	-.096	.086	.135	.075	-.188	.039	-.153	.271*	1	
Secret-C (S-C): Holcim only discloses information when it is required to do so.	-.270	-.093	-.073	.090	.129	.239	.164	.021	.222	-.171	-.232	.220	.113	1

Thus, *accountability* is associated with transparency and in particular the rapidity in which both good and bad news is provided, and thus an important contributor to the link between transparency and trustworthiness.

In the case of Holcim's sampled institutional investors, *participation* is not strongly associated with transparency. This is quite different in Rawlins' analysis of an employer-employee relationship, where *participation* as well as *substantial information* and *accountability* were found to be a significant contributor to transparency. This may simply reflect the fact that many institutional investors do not see themselves as owners of the firm but prefer to simply focus on investment considerations.[128]

When looking at Holcim's information policy, the Pearson correlations reveal statistical significance across all items and also for two of the three evaluations of overall transparency, Transp-B[129] and Transp-C[130](see Table XVII). The last three items, especially the two reverse items, are not that significant. However, the negative correlation here does indicate, even if not always statistically significant, that those investors who strongly agree on the positive components, tend to agree less on the negative items, and vice versa. The non-parametric correlation analysis, which can be found in the appendix, confirms these results.

To sum up, Holcim's information policy is highly associated with overall transparency, in terms of accountability, and that Holcim wants its investors to be informed of what it is doing and why. However, information policy is not related to a desire on the part of Holcim's management to understand how its decisions affect its investors.

[128]See for example Rasonyi (2009).
[129]"Holcim's management wants to be accountable to its investors for its actions."
[130]"Holcim wants its investors to know what it is doing and why it is doing it."

Table XVII
Correlation Analysis of the Components of Transparency (Part Information)

This table shows the Pearson correlations for perceptions of Holcim's information policy with the perception of overall transparency where Transp-A stands for "Holcim's management wants to understand how its decisions affect its investors.", Transp-B stands for "Holcim's management wants to be accountable to its investors for its actions.", and Transp-C stands for "Holcim wants its investors to know what it is doing and why it is doing it.".* denotes significant at 5%, ** denotes significant at 1%.

	Pearson Correlations																
	T-A	T-B	T-C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Transp-A	1																
Transp-B	.206	1															
Transp-C	.207	.324**	1														
D. useful	.089	.466**	.365**	1													
E. relevant	-.126	.222	.231	.456**	1												
F. detailed	-.006	-.005	.337**	.321**	.337**	1											
G. timely	.091	.375**	.360**	.376**	.329**	.243*	1										
H. complete	-.018	.170	.327**	.461**	.398**	.395**	.337**	1									
I. understandable	-.073	.293*	.409**	.591**	.243*	.378**	.319**	.351**	1								
J. accurate	.011	.359**	.383**	.521**	.681**	.390**	.420**	.449**	.412**	1							
K. reliable	-.068	.359**	.207	.483**	.586**	.274*	.214	.400**	.317**	.744**	1						
L. easily found	-.036	.257*	.284*	.528**	.392**	.329**	.344**	.365**	.412**	.419**	.372**	1					
M. consistent	.005	.497**	.415**	.708**	.491**	.329**	.261*	.458**	.565**	.579**	.655**	.473**	1				
N. comparable to past	-.026	.282*	.307*	.466**	.383**	.149	.448**	.371**	.431**	.524**	.433**	.457**	.377**	1			
O. comparable to industry	.131	.204	.128	.402**	.182	.259*	.254*	.133	.184	.341**	.198	.320**	.284*	.236*	1		
P. only part of the story	-.105	-.019	-.187	-.117	-.090	-.161	-.056	-.269*	-.297*	-.099	-.201	-.028	-.251*	-.051	.028	1	
Q. difficult to understand	.175	-.063	-.018	-.093	-.104	-.245*	-.155	.050	-.128	-.151	-.147	-.242*	-.214	-.089	-.228	.011	1

Differences in Debt and Equity Investors Perception

The results for both debt and equity investors support the statistically significant negative correlation for the overall transparency item B. ("Holcim's management wants to be accountable to its investors for its actions.") and for the *secretiveness* item M. ("Holcim is slow in providing information to its investors.").

The positive, statistically significant correlation between the *accountability* and the *participation* items is driven by the debt investors (the equity side shows no significance). All the other statistically significant correlations stem from equity investor conviction.

The cross-tab and chi-square analysis also reveal some differences in debt and equity investor perceptions regarding Holcim's communication policy (see Table XVIII).

Table XVIII
Difference in Perception by Debt and Equity Side

This table shows debt and equity investor perceptions with respect to the components of transparency.

Components of Transparency	Cramér's V	Sign.
Transp-B: Holcim's management wants to be accountable to its investors for its actions.	0.343	0.012
Partic-A: I am asked for feedback about the quality of the information provided by Holcim.	0.335	0.031
Account-E: Even information that might be damaging to the company is provided.	0.322	0.039
Secret-A: Holcim is slow in providing information to its investors.	0.314	0.039

Regarding overall transparency Transp-B, the debt holders clearly (75%) agree less with the statement than the equity holders, whose responses are more scattered, but still with a focus in the middle. For the three other items there is very strong agreement (60% or more) on the debt holder side. The shareholders are rather scattered with a focus in the middle.

Differences in Analyst and Asset Manager Perception

It is mostly the asset managers' positive opinion that drives the correlations, except for the correlations between *participation* and *accountability*, where the analysts' opinion dominate. The cross-tab and chi-square analysis shows only one statement for which analysts show less agreement, i.e.: "Holcim's management is open to criticism."[131]

[131] Cramér's V 0.445, Sign. 0.002.

Analysis of Multicollinearity
The high correlations between the variables suggest that there might be a problem of multicollinearity[132]. This was tested for by using the variance inflation factor (VIF). As the VIF is between 1 and sightly above 2 for all the variables multicollinearity has to be borne in mind when interpreting model results. This is particularly true for the variables *competence*, *integrity*, *goodwill*, and *substantial information*.

C.3. Interrelationship Between Different Forms of Trust

Another goal of this survey was to check on some of the statements found in the literature regarding the interrelationship of different forms of trust. Apart from measuring the trustworthiness respondents express specifically with respect to Holcim, I also asked them to evaluate:

- their general trust propensity,
- their opinion on whether investing in general is perceived to be an act of trust, and
- five institutional trust features that may feed into an attitude of company trust, i.e.
  - trust in the stock market,
  - trust in the general economic development,
  - trust in large corporations,
  - trust in the government,
  - trust in shareholders.

The correlation matrix on the different forms of trust (see Table XIX) highlights five things[133]:

[132] Multicollinearity means that there is a strong correlation between two or more predictors in a regression model. Problems that might arise due to multicollinearity are that the beta coefficient becomes untrustworthy because multicollinearity increases the standard error as well. It may also limit the size of R-Square and make it difficult to assess the individual importance of the predictors (Field (2009)).

[133] The conclusions can be drawn from both the parametric and the non-parametric analysis. See appendix for non-parametric analysis.

1. The two specific forms of perceived trustworthiness—of Holcim as a firm and of management respectively—relate highly and positively to each other.

2. The other forms of trust do not relate to the specific perceptions of Holcim's trustworthiness.

3. The general trust propensity does not relate to the other forms of trust regarding investing.

4. The general attitude regarding investing as an act of trust is only statistically significant with respect to the trust put in the stock market.

5. The various institutional forms of trust correlate positively, and highly significantly with each other.

Table XIX
Correlation Analysis of Different Forms of Trust

This table shows the Pearson correlations for different forms of trust. * denotes significant at 5%, ** denotes significant at 1%.

	Pearson Correlations								
Forms of Trust	A.	B.	C.	D.	E.	F.	G.	H.	I.
A. Holcim as a firm	1								
B. Holcim's management	.328**	1							
C. General propensity	.145	.195	1						
D. Investing	.060	-.169	.149	1					
E. Stock market	.049	-.111	.107	.311*	1				
F. Large corporations	.034	.168	.164	-.018	.351**	1			
G. Government	.145	-.095	.021	.112	.098	.378**	1		
H. Economy	.053	.078	.216	.113	.390**	.364**	.280*	1	
I. Shareholders	-.084	.166	-.032	.205	.401**	.571**	.321*	.315*	1

Differences in Opinion Between Debt and Equity Investors

The positive correlations and statistical significance derive mainly from the equity side. Positive correlations are also common for debt investors but due to the small number of respondents they are not statistically significant.

One exception here is given by the relationship between the trust in large corporations and in shareholders (variables F and I). Here the correlation is strongly positive and statistically significant for both debt and equity investors.

A further exception exists with respect to the correlation between trust in the government and trust in the economy (variables G and H). For debt investors correlations are negative (without being significant). A positive correlation and significance is based entirely on equity investor responses.

Differences in Opinion between Analysts and Asset Managers

While most of the positive and statistically significant correlations derive from both analysts and asset managers, the asset managers have a clearer opinion on the following four positive correlation pairs[134]: investing as an act of trust with the trust in the stock market (variables D and E), trust in the general economic development with trust in the stock market (variables H and E), trust in the general economic development with trust in the government (variables H and G), and trust in the shareholders with trust in the government (variables I with G).

One major exception concerns the correlation between the general economic development and shareholders. Here the positive correlation derives significantly only from the responses of analysts, not from those of asset managers.

C.4. Summing Up

The main analysis on the interrelationship between perceptions of trustworthiness and transparency was performed at an aggregate level. The various sub-items of the different components of trustworthiness and transparency were merged giving the variables *trustworthiness*, *competence*, *integrity*, *goodwill*, and *transparency*, *substantial information*, *participation*, *accountability*, and *secretiveness*.

The correlation analysis of these aggregated items showed there to be a high correlation with overall trustworthiness and with the different trustworthiness and transparency components. The only item for which this was not true was *participation*. Investor doubts concerning this last point were confirmed by checking the non-aggregated data.

The regression analysis revealed that *integrity* was the most important component of overall perceived trustworthiness, as was the component *substantial information* in the perception of overall transparency. The analysis also confirmed that the components of transparency do not explain transparency as well as in the case of trustworthiness. Of the transparency components, it is

[134]Only for the asset managers statistically significant.

the component *substantial information* which influenced overall trustworthiness most strongly. This is true also for the analysis of *competence* and the transparency items. *Integrity* is additionally influenced by *accountability*, whereas *goodwill* is influenced by *openness* (as reverse item to *secretiveness*) of Holcim.

When adding investor and relationship characteristics to the analysis, it is only the *integrity* item that remains robust to any changes in the model. The more relationship variables are added, the more the components *substantial information* and *goodwill* lose whereas *competence* gains in significance. Those, who cultivate personal contact with the firm, either with the senior management, the investor relations team, or the treasury team, perceive Holcim as more trustworthy. Overall, the asset managers perceive the firm to be more trustworthy than the analysts do. Regarding overall trustworthiness, no significant difference between debt and equity investors was found.

When distinguishing between the perceived trustworthiness of the firm in general, and the perceived trustworthiness of the management, the effects of overall trustworthiness are mainly driven by the trustworthiness of the management. In case of the firm's trustworthiness the effects are more or less the same, except that equity investors perceive Holcim as less trustworthy than debt investors. This seems primarily due to the *goodwill* component which is associated with trustworthiness. This changes when adding the investor characteristics and relationship variables. Here it all comes down to *integrity* again.

D. Summary Section VII

As a final summary of the empirical results, the following insight can be summarized regarding the initially stated research hypotheses:

- *Hypothesis IA: Overall trustworthiness is the result of the components competence, integrity, and goodwill.*

  Hypothesis IA can be confirmed in the case of Holcim: the components competence, integrity, and goodwill are highly positively correlated with the perceived trustworthiness of the firm. The most important component is integrity.

- *Hypothesis IB: There is a difference between perceived firm trustworthiness and perceived management trustworthiness.*

  Hypothesis IB can also be confirmed. There is a slight difference between the perceived trustworthiness of a firm in general, and the perceived trustworthiness of the management. Regarding the former, the items of *goodwill* are particularly important, followed by the *integrity* items. Regarding the latter, *integrity* is foremost, followed by the *competence* items.

- *Hypothesis IC: Overall transparency is the result of the components substantial information, participation, accountability, and secretiveness (a reverse item to openness).*

  Hypothesis IC can only be confirmed partially. *Substantial information* is the most important component of transparency. For the other components the association is less clear. On an overall level, the item *participation* appears weakest since it does not explain transparency at all. The most interesting and clearest result is found for the two items of the component *accountability* concerning the provision of bad news and admission of mistakes in time. This was also confirmed in an analysis of other statements relating to the transparency effort of Holcim.

- *Hypothesis IIA: There is no interrelationship between the general trust propensity and the perception of trustworthiness regarding a specific firm.*

  Hypothesis IIA can be confirmed, there is no interrelationship between the general trust propensity and the perception of Holcim's trustworthiness.

- *Hypothesis IIB and IIC: There is an interrelationship between the general attitude of institutional investors regarding investing as an act of trust and the perception of trustworthiness regarding a specific firm. There is no interrelationship between the general trust propensity and the perception of trustworthiness regarding a specific firm.*

  Hypothesis IIB and Hypothesis IIC have to be rejected. There is no visible interrelationship between the general attitude of seeing investing as an act of trust and perceived trustworthiness specific to Holcim. Attitudes towards the different forms of institutional trust are not correlated with the specific trustworthiness of the company.

- *Hypothesis IIIA: Overall perceived trustworthiness and overall perceived transparency are positively related concepts.*

  The core of this study's analysis—the interrelationship of trustworthiness and transparency—, i.e. Hypothesis IIIA, can generally be confirmed.

While there is a link between the provision of *substantial information* and the perceived overall trustworthiness of Holcim, at the end of the day, it is *integrity* that counts most.

- *Hypothesis IIIB: Investor and relationship characteristics influence the perception of trustworthiness and transparency and their interrelationship.*

  The addition of investor and relationship characteristics to the analysis makes the result of Hypothesis IIIA even clearer. Hypothesis IIIB can be confirmed: these variables influence the perception of trustworthiness and transparency.

VIII. Conclusions

This last section concludes by responding to the research questions posed at the beginning of the present essay. After highlighting the key insights some limitations and further research ideas are presented.

A. Responding to the Research Questions

The first research question concerned how trust is defined, whether trust is a phenomenon in economic exchange, and whether it can be analyzed in economic terms.

The prime meaning of trust in human and social life is reflected in numerous research contributions on the topic. It is a phenomenon with various dimensions and presents itself in distinct forms. Over the last decade, also economic research on trust advanced considerably, in particular empirically regarding the impact of general propensities to trust on social and economic behavior.

The view that the calculative approach of economics is inherently unsuitable for the analysis of trust, together with difficulties relating to an exact measurement of trust, have led over a long time to great reluctance of a treatment of trust in economics. In addition, trust was deemed to be a moral problem, and as such more suitable for analysis within the framework of ethics than that of economics. The newer schools of economic thought now allow for a more holistic view of the human actor. This opens up space for treating trust as a phenomenon of high relevance to social exchange and therefore, to economic exchange as well. Once the assumptions of perfect rationality and complete and symmetric information are loosened, trust becomes amenable to economic analysis.

Trusting is foremost a positive attitude towards another party, i.e. an individual, an organization, or a system. A situation that involves trust always entails an element of uncertainty, i.e. potential loss for the party that places trust. This aspect is referred to as vulnerability. Vulnerability is the key to any situation of trust since its presence differentiates trust from any other decision under risk.

A temporal dimension is also inherent in trust. Trust is by its very nature prospective since it points to an unpredictable future. In contrast to a situation governed by explicit contracts which fix relevant and possible contingencies, it remains anticipative and open at the same time. Retrospective trust is based on information acquired in the past and acts as a basis for prospective trust.

Multiple forms of trust can be distinguished. First, the general trust propensity of an individual shall be mentioned, i.e. the general attitude of a person when first confronting a stranger. With respect to society as a whole, this form of trust is called aggregate trust or social trust. Apart from this base level of trust, the trust phenomenon depends strongly on the specific circumstances of a situation. Further, the nature of trust differs depending on whether it is relationship- or system-based.

If an individual has a general positive attitude towards a particular situation which is uncertain, not directly controllable, and potentially damaging, the literature speaks of the actor exhibiting confidence or system trust.

Trusting in the narrow sense originates in relationships between the party placing trust, called the trustor, and the party to be trusted, referred to as the trustee, when the trustor is uncertain regarding the capabilities or intentions of the trustee. Trust in the strictest sense refers to the latter aspect, i.e. uncertainty about the motivation or integrity of the trustee.

The first act of trust by the trustor might lead to relational trust if the placement of the risky advance is positively reciprocated by the trustee. The decision to trust is embedded in and influenced by its social context. Trusting means that trustworthiness is expected but it becomes only manifest when a trusting action takes place which makes the trusting agent vulnerable. Upon the trusting action, the trust receiver may decide whether or not to exploit the vulnerability of the opponent.

This essay follows the economic definition of trust Fehr (2009) who states that the trustor exhibits trust in the narrow sense "[...] if she voluntarily places resources at the disposal of another party (the trustee) without any legal commitment from the latter. In addition, the act of trust is associated with an expectation that the act will pay off in terms of the investor's goals. In particular, if the trustee is trustworthy the investor is better off than if trust were not placed, whereas if the trustee is not trustworthy the investor is worse off than if trust were not placed."(p.3).

Modeling trust as an implicit contract between the trustor and the trustee highlights three forms of behavioral risk involved from the trustor's perspective. First, there is an adverse selection problem before placing the risky advance because the trustee has access to private information concerning her trustworthiness. Second, once the trusting action is performed, the trustor faces a hold-up risk as the risky advance is a one-sided irreversible investment, a situation which may be abused by the trustee. Finally, there may be a situation of moral hazard since the trustor might not be able to distinguish between the level of effort of the trustee in reciprocating and the impact of exogenous events on the situation.

The second research question concerned the role of trust in the investment decision and within the investment relationship.

Applying the insight of the first research question to the context of investing demonstrates that investing can be seen as an act of trust because the investor, as the trustor, faces various forms of uncertainty when placing her money in the hands of a company, the trustee. Through the separation of ownership and control there is a natural information gap between the management making strategic decisions and the information provided to investors. Thus, there is a one-sided dependency of the investor which makes her vulnerable as the consequences of managerial decisions are only revealed after the investment is placed. The investor will only invest if she has a positive attitude towards the specific firm and its profitability. Such an attitude comprises belief in the company's competence, i.e. its strategic positioning, and trust in the integrity of the management and in the provision of honest information.

Besides the specific characteristics of a firm, other forms of trust are also relevant and feed into the final investment decision in a market setting. The investor will only invest if she has a positive attitude with respect to the general economic development, and if she believes in the well functioning of the market system and related institutions.

Within the neoclassical framework of modern finance the investor investment decisions are based upon risk and expected return. The probabilistic models used in this context assume perfect rationality and complete and symmetric information, and do not leave any room for the analysis or inclusion of trust in the decision calculus. In contrast, new institutional economics interconnect the aspect of trust by linking it to the possibility of a risk premium. In other words, where investors suspect managers may take advantage of private information, they demand compensation in the form of a higher return, i.e. a premium of mistrust. Some behavioral approaches also discuss the relationship between trust and risk within the investment setting, and the impact of aggregated trust on financial markets. From their point of view the perceived risk of an investment target is shaped by various forms of trust given. Besides the objective measures of risk and expected return, individuals also apply subjective probabilities to assess the reliability of the information provided, the fairness of the overall system, and the possibility of being cheated.

The investment decision of an institutional investor choosing to invest in a listed firm is actually the result of an investment process which comprises a pre-investment and a post-investment stage. In the pre-investment stage the asset manager will acquire information and screen investment opportunities. Along the line of this process, the investment-trust process can be modeled. The investor as the trustor establishes an expectation concerning the trustworthiness of the firm by gathering information and evaluating the target regarding the factors competence, integrity, and goodwill. The general trust attitude of the investor is combined with the beliefs on the trustworthiness of the trustee to form the so-called expectation of trust. The actual investment decision as the trusting action will further depend on the specific characteristics of the situation, i.e. on the perceived risk. As investing is part of a dynamic environment, the investment decision has to be continuously re-evaluated. Investing remains a trusting action even after the initial act of investing since although outside investors become stakeholders of the firm, a one-sided dependency on information provision remains. However, there is a change in that the relationship generates new personal experience and this feeds back continuously into investor perceptions concerning the extent and form of trust.

As a third step the role of information in establishing trust within the investment relationship was to be challenged.

In general, it can be said that information is an important element in the formation of trust. Even though some researchers claim that trusting a stranger, i.e. acting without experience with or information on the party to be trusted, is the purest form of trust, the trust phenomenon can also be looked at as a process that starts with an analysis of the trustee's trustworthiness by the trustor. This initial analysis is both a cognitive and an emotional process, and here cognition depends on all information available being processed. This up-front analysis, i.e. being cautious before actually engaging in trust, does not contradict the concept of trust since trusting for the trustor involves vulnerability by definition, thus, potentially negative consequences.

The above holds true for investing as well. Information is clearly essential for investing, both before and during the investment period, as the investment decision is continuously re-assessed and has to be taken over and over again. Owing to the separation of ownership and control (potential) investors depend upon the company to provide the information needed for their investment decision.

Thus, information is crucial for an investor, particularly at the stage of an initial potential investment engagement with a firm. In the absence of personal experience, information provided by others and in particular the reputation of the firm are decisive in that they will strongly influence the perception of the investor. Reputation can only be built up through the observation of trustworthy behavior, one further indication that investing can really be looked at as a trusting action. Information in the pre-investment stage has fundamental significance since without it, the initial placement of trust—the risky advance—would be rejected as being too risky.

Information also remains important in the post-investment phase, as the investment decision is part of a dynamic process and has to be continuously re-evaluated. Additionally, information-dependency is still present since even though investors become stakeholders of the firm, they remain outsiders. However, once the relationship is initiated, both outside information and personal experience become a basis for the investment decision.

Finally, I analyzed the interdependency between the investor perception of firm trustworthiness and the transparency effort of a listed firm.

Credible information provision and trust are phenomena that reinforce each other through interaction and communication. In this sense an effort to improve corporate transparency may be seen as a positive signal because, besides helping investors to take better informed decisions, transparency can only be lived with firm outsiders when a firm's internal structure is well manageable. Further, a spirit of openness also implies that there is nothing to hide.

Transparency is defined as being based upon perception of specific factors such as substantial information, participation, accountability, and openness. Trust and transparency are related to each other through the establishment of a trustworthy reputation, the latter being defined in terms of the factors competence, integrity, and goodwill. Even though trustworthiness is not primarily a question of information, information transparency does entail a clear ethical element, and this is which acts as bridge between the two phenomena. For the management, the concept of accountability refers to their willingness to take responsibility for their decisions. Openness inheres a form of vulnerability from the firm's perspective. Greater openness entails a belief that the recipients of information will act maturely and responsibly. In other words, greater informational transparency is not to be interpreted as a mere chimera used to "promote" trustworthiness but can be seen as a positive sign speaking for the firm's trustworthiness.

As part of an empirical investigation designed to examine the above questions and theoretical insights, institutional investors of the Swiss listed firm Holcim were surveyed regarding their perceptions of Holcim's trustworthiness and transparency. A statistical analysis of the investor responses revealed that while substantial information, as one factor in the perception of transparency, is highly associated with the perception of trustworthiness, integrity is even more pronounced.

The correlation analysis shows statistically significant positive correlations for the factors competence, integrity, and goodwill with the overall perceived trustworthiness of the firm, which confirms their relevance in the establishment of a perception of trustworthiness. Slight differences where found when comparing the perceived trustworthiness of the firm in general and the perceived trustworthiness of the management. For the former goodwill appears to be particularly important, followed by integrity. For the latter, the trustworthiness of the management, the factor integrity dominates in impact, followed by the factor competence. These results also indicate that the formation of an opinion on a firm's trustworthiness is not primarily based on uncertainty with respect to competence, but rather on the uncertainty regarding intentions of the management.

The appraisal of Holcim's transparency effort in terms of the factors substantial information, participation, accountability, and secretiveness (a reverse item for openness) shows that substantial information is highly correlated with overall transparency, as are the accountability and openness items concerning provision of timely information and admission of mistakes. The participation component is the one factor that shows no significant interrelationship with overall transparency, indicating that investors do not associate participation highly with transparency.

In a regression analysis all factors of trustworthiness and transparency were used in an attempt to explain overall trustworthiness. This analysis reveals that integrity is the most important factor in overall perceived trustworthiness, followed by substantial information. The analysis was extended to include investor and relationship characteristics such as debt or equity investors, asset managers or analysts, personal relationship to the firm, and past experience with the firm. After adding these variables, the only factor for which significance remained robust was the factor integrity, while the factors substantial information and goodwill lost in significance, and competence gained. Those, who cultivate personal contact with the firm, either with the senior management, the investor relations team, or the treasury team, perceive Holcim as being more trustworthy. Overall, the asset managers perceive the firm as more trustworthy than the analysts do. Regarding overall trustworthiness, no statistically significant difference between debt and equity investors was found.

In looking at the perceived trustworthiness of the firm in general and that of the management, overall trustworthiness is mainly driven by the trustworthiness of the management. The above described results are more or less the same for both forms of trustworthiness, except that in the case of the trustworthiness of the firm, it turns out that shareholders perceive Holcim as being less trustworthy than do debt investors and that primarily the goodwill component is associated with overall trustworthiness. This changes once investor characteristics and relationship variables are added, when once again it all comes down to integrity.

B. Limitations and Outlook

This essay attempted to analyze the highly important social phenomenon of trust and the role of information and transparency in the context of investing. Any analysis with respect to such a fundamental and elusive topic such as trust will always be found wanting and to some extent incomplete. While the introductory theoretical discussion can be seen as quite abstract, the subsequent empirical discussion also faced specific limitations. First and foremost the limited size and composition of the sample means that no representative conclusions can be drawn and generalization is impossible. Further, the problem of multicollinearity needs to be addressed in more detail.

This was the first time that the survey tool used here was applied to the context of investing. It would thus be interesting in future to see how investors of other listed firms perceive the various factors feeding into the perception of overall trustworthiness. Regarding the topic of trust within the investment setting, it would be especially worthwhile to find out more about the implications of perceived trustworthiness on investing and the connection between perceived trustworthiness and perceived risk.

Despite the modest explanatory power of the empirical analysis, the key message drawn from it is congruent both with the theoretical analysis and with latest experimental research results, which prove that values such as honesty, integrity, and reliability are indeed factors influencing investor decisions (Tanner et al. (2010)). A study on perceptions in capital markets underlines the crucial importance of the perception of market participants by saying that "whoever does not communicate, remains invisible" (Meckel et al. (2007)). In this sense, information and communication as part of the transparency effort are necessary in establishing a reputation of trustworthiness, which then serves as the basis for investing. But it needs to be remembered that trustworthiness can not be communicated unless it is actually lived.

IX. Appendix

A. The Questionnaire

The questionnaire is divided into two parts: those questions focusing on a professional perspective (Questions 1.–25.) and those questions focusing on a personal perspective (Questions 26.–30). Equity and debt investors were addressed separately, and results then merged afterwards. A generalized version of the questionnaire can be found below. The possibility of routing within the web-survey meant that analysts had to answer slightly fewer questions than asset managers. Questions that were only posed to asset managers are marked with (AM), those only posed to analysts with (A). Whenever reasonable, response options were randomized.

1. Which of the following best describes your position within the company you are working for?
2. What kind of institutional investor best characterizes the company you are working for?
3. What is the investment horizon for the major part of the funds managed by yourself? What is the funds volume under your personal management and responsibility? (AM)
4. Please evaluate the following statement: "I perceive investing in a company as an act of trust."
5. Which sources of information about a company do you normally consult to inform yourself about a company? (A)
6. Which sources of information about a company do you normally consult before investing? (AM)
7. How are investment decisions generally taken for the major part of the funds in your responsibility? What is the investment style of the major part of the funds in your responsibility? (AM)
8. Which sources of information of a company do you normally consult while you are invested in a company? (AM)
9. Are you currently invested in Holcim? Have you ever held Holcim in your portfolio? (AM)

10. What is the fraction of Holcim in your portfolio (in percent) and since when have you been holding Holcim (year)? (AM)

11. What are the reasons you would currently recommend Holcim or you are currently invested in Holcim?

12. If I have established trust in a company, I could imagine not selling my investment despite the following signals:... (AM)

13. News I heard about Holcim during the last twelve months were...

14. I cultivate a personal relationship to...

15. Please evaluate your relationship to Holcim by assessing the following statements using a scale between "Strongly disagree" (- - -) and "Strongly agree" (+++) or No Statement.

    (a) I trust Holcim to take care of its investors.

    (b) I trust Holcim's management.

    (c) I feel very confident about the skills of Holcim as a firm.

    (d) Holcim's management has the ability to accomplish what it says it will do.

    (e) The company is known to be successful at the things it plans to do.

    (f) I perceive to be treated fairly and justly by Holcim.

    (g) I know I can rely on Holcim to keep its promises.

    (h) The behavior of the people that work for Holcim seems to be guided by sound principles.

    (i) Holcim does not mislead any of its stakeholders.

    (j) I am sure that information which is relevant for me is honestly conveyed by Holcim.

    (k) Whenever decisions are taken I know Holcim's management is concerned about its investors.

    (l) Investors' opinion is taken into account when Holcim is making decisions.

    (m) This company is interested in the well-being of its investors, not just itself.

16. Please evaluate the following statements on how Holcim is handling information relevant for debt investors using a scale between "Strongly disagree" (- - -) and "Strongly agree" (+++) or No Statement.
"The information provided by Holcim to its investors...

    (a) ...is useful."
    (b) ...is relevant to me."
    (c) ...is detailed."
    (d) ...arrives in a timely fashion."
    (e) ...is complete."
    (f) ...can easily be understood."
    (g) ...is accurate."
    (h) ...is reliable."
    (i) ...can easily be found."
    (j) ...is consistent throughout different sources of information."
    (k) ...can be compared to previous performances."
    (l) ...can be compared to industry standards."
    (m) ...tells only part of the story."
    (n) ...seems to be intentionally written in a difficult way to understand."

17. Please evaluate Holcim's behavior regarding communication by assessing the following statements using a scale between "Strongly disagree" (- - -) and "Strongly agree" (+++) or No Statement.

    (a) Holcim's management wants to understand how its decisions affect its investors.
    (b) Holcim's management wants to be accountable to its investors for its actions.
    (c) Holcim wants its investors to know what it is doing and why it is doing it.
    (d) I am asked for feedback about the quality of the information provided by Holcim.
    (e) Holcim involves people like me to help identify the information investors need.

(f) I am asked for my opinion before decisions are taken.

(g) Holcim presents more than one side of controversial issues.

(h) Even information that might be damaging to the company is provided.

(i) Holcim's management is open to criticism.

(j) Mistakes are freely admitted.

(k) Bad news is provided in a timely fashion.

(l) Often important informational details are left out.

(m) Holcim is slow in providing information to its investors.

(n) Holcim only discloses information when it is required to do so.

18. Has Holcim ever disappointed you? What was it that caused your disappointment? Did the disappointment cause you to take any action?

19. Is there information that you need or expect from Holcim as an investor that you do not get right now?

20. Generally speaking, would you say that most people can be trusted or that you have to be very careful in dealing with other people?

21. Please evaluate the following items on a scale between "I do not trust at all" (- - -) and "I trust completely" (+++) or No statement:

    (a) The stock market

    (b) Large corporations

    (c) The government

    (d) The general economic development

    (e) Shareholders

22. Since when have you been professionally involved in the area of asset management (year)?

23. Sex and Year of birth

B. Non-parametric Correlation Analysis

Table XX
Non-parametric Correlation Analysis of Different Forms of Trust

This table shows the Kendall Tau correlations between different forms of trust. * denotes significant at 5%, ** denotes significant at 1% level.

Kendall Tau Correlations									
Forms of Trust	A.	B.	C.	D.	E.	F.	G.	H.	I.
A. Holcim as a firm	1								
B. Holcim's management	.318**	1							
C. General propensity	.123	.163	1						
D. Investing	.115	-.027	.123	1					
E. Stock market	.043	-.087	.114	.316**	1				
F. Large corporations	.091	.167	.178	.072	.294**	1			
G. Government	.112	-.083	.029	.042	.098	.323**	1		
H. Economy	.035	.044	.192	.102	.309**	.325**	.255*	1	
I. Shareholders	-.078	.141	.022	.180	.315**	.474**	.306**	.273*	1

Table XXI
Non-Parametric Correlations of the Reasons for Holcim

This table shows Kendall Tau evaluation of reasons for an investment in Holcim. * denotes significant at 5%, ** denotes significant at 1% level.

Kendall Tau Correlations																	
	A.	B.	C.	D.	E.	F.	G.	H.	I.	J.	K.	L.	M.	N.	O.	P.	Q.
A. Rating	1																
B. Industry	0.550	1															
C. General strategy	-0.060	.312*	1														
D. Geographic exposure	0.060	0.092	0.186	1													
E. Operations/Organization	0.060	0.226	0.056	0.183	1												
F. Financials	-0.100	0.053	.489**	0.185	0.251	1											
G. Dividend policy	-0.158	0.089	.282*	0.043	0.040	0.191	1										
H. Risk/Return	-0.316	-0.125	-0.043	0.056	0.223	0.240	.316*	1									
I. Senior management	0.632	0.190	0.244	0.051	0.200	0.255	0.039	0.068	1								
J. Corporate governance	0.350	0.093	0.208	0.111	.289*	0.097	0.341**	0.085	.492**	1							
K. Reputation	0.350	0.187	0.111	-0.035	0.018	0.019	0.219	-0.115	.353**	.600**	1						
L. Recommendations	0.598	-0.052	0.131	0.003	-0.052	-0.009	.286*	-0.069	0.000	.311*	.508**	1					
M. Success in the past	0.316	-0.026	-0.110	0.189	0.097	-0.108	0.104	-0.130	0.194	.329**	.350**	.347**	1				
N. Future potential	0.060	0.063	0.030	.448**	0.122	0.198	-0.072	0.238	.268*	0.063	0.048	0.056	0.139	1			
O. Sustainability	0.462	0.000	.278*	.274*	0.133	0.092	0.229	0.058	0.183	.312*	.252*	.397**	.302*	.310*	1		
P. Communication policy	0.060	0.131	0.030	0.192	0.111	0.070	0.206	-0.040	0.232	.297*	.458**	0.191	.313*	0.178	.399**	1	
Q. Momentum	0.158	0.197	0.000	0.123	0.225	-0.081	-0.130	-0.207	-0.057	0.034	0.111	0.148	.282*	0.166	0.22	.328**	1

Table XXII
Non-Parametric Correlation Analysis of the Components of Trust

This table shows the Kendall Tau correlations for perception of overall trust in the firm, overall trust in the management, and the components of trust—competence, integrity, and goodwill—with their items respectively. * denotes significant at 5%, ** denotes significant at 1% level.

	Kendall's Tau Correlations												
	T-F	T-M	C-A	C-B	C-C	I-A	I-B	I-C	I-D	J-E	G-A	G-B	G-C
Trust-F: I trust Holcim to take care of its investors.	1												
Trust-M: I trust Holcim's management.	.318**	1											
Compet-A: I feel very confident about the skills of Holcim as a firm.	.354**	.436**	1										
Compet-B: Holcim's management has the ability to accomplish what it says it will do.	.253*	.225*	.339**	1									
Compet-C: The company is known to be successful at the things it plans to do.	.265*	.280**	.482**	.346**	1								
Integ-A: I perceive to be treated fairly and justly by Holcim.	.502**	.501**	.361**	.295**	.304**	1							
Integ-B: I know I can rely on Holcim to keep its promises.	.483**	.512**	.401**	.304**	.202	.421**	1						
Integ-C: The behavior of the people that work for Holcim seems to be guided by sound principles.	.450**	.302**	.552**	.314**	.289*	.436**	.408**	1					
Integ-D: Holcim does not mislead any of its stakeholders.	.458**	.430**	.194	.382**	.270*	.445**	.350**	.273*	1				
Integ-E: I am sure that information which is relevant to me is honestly conveyed by Holcim.	.363**	.272*	.110	.193	.331**	.415**	.180	.247*	.555**	1			
Good-A: Whenever decisions are taken, I know Holcim's management is concerned about its investors.	.405**	.362**	.254*	.226*	.250*	.379**	.281*	.245*	.482**	.354**	1		
Good-B: Investors' opinion is taken into account when Holcim is making decisions.	.171	.105	.208	.217	.202	.237*	.251*	.255*	.260*	.260*	.230*	1	
Good-C: This company is interested in the well-being of its investors, not just itself.	.642**	.261*	.312**	.327**	.297**	.312**	.320**	.489**	.448**	.354**	.373**	.231*	1

Table XXIII
Non-parametric Correlation Analysis of the Components of Transparency (Part Communication)

This table shows the Kendall Tau correlations of Holcim's perceived communication policy, overall transparency, and the components participation, accountability, and secretiveness with their items respectively. * denotes significant at 5%, ** denotes significant at 1% level.

	Kendall Tau Correlations													
	T-A	T-B	T-C	P-A	P-B	P-C	A-A	A-B	A-C	A-D	A-E	S-A	S-B	S-C
Transp-A: Holcim's management wants to understand how its decisions affect its investors.	1													
Transp-B: Holcim's management wants to be accountable to its investors for its actions.	.216	1												
Transp-C: Holcim wants its investors to know what it is doing and why it is doing it.	.196	.335**	1											
Partic-A: I am asked for feedback about the quality of the information provided by Holcim.	-.071	-.023	.040	1										
Partic-B: Holcim involves people like me to help identify the information investors need.	.119	.164	.112	.416**	1									
Partic-C: I am asked for my opinion before decisions are taken.	-.225	.048	-.089	-.035	.098	1								
Account-A: Holcim presents more than one side of controversial issues.	.093	-.030	.030	.184	.159	.326*	1							
Account-B: Even information that might be damaging to the company is provided.	.174	.050	.240	.059	.098	-.026	.190	1						
Account-C: Holcim's management is open to criticism.	.142	.080	.073	.277*	.303*	-.136	.168	.077	1					
Account-D: Mistakes are freely admitted.	-.019	-.108	-.103	.201	-.011	.080	.022	.056	-.055	1				
Account-E: Bad news is provided in a timely fashion.	.365**	.107	.333**	.192	.140	-.242	.126	.363**	.163	.142	1			
Secret-A: Often important informational details are left out.	-.100	-.151	-.180	-.029	-.107	-.241	.010	-.009	-.047	-.064	-.235*	1		
Secret-B: Holcim is slow in providing information to its investors.	-.085	-.404**	-.130	-.081	-.077	.063	.121	.054	-.189	.029	-.150	.244*	1	
Secret-C: Holcim only discloses information when it is required to do so.	-.236	-.068	-.057	.081	.124	.231	.145	.020	.202	-.148	-.194	.203	.094	1

Table XXIV
Non-parametric Correlation Analysis of the Components of Transparency (Part Information)

This table shows the Kendall Tau correlations of the items of Holcim's perceived information policy. * denotes significant at 5%, ** denotes significant at 1% level.

	Kendall Tau Correlations																
	T-A	T-B	T-C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Transp-A	1																
Transp-B	.216	1															
Transp-C	.196	.335**	1														
D. useful	.119	.453**	.364**	1													
E. relevant	-.091	.215	.214	.430**	1												
F. detailed	-.002	.019	.297**	.305**	.311**	1											
G. timely	.086	.358**	.334**	.354**	.309**	.215*	1										
H. complete	.013	.172	.319**	.443**	.358**	.371**	.288**	1									
I. understandable	-.045	.275*	.381**	.567**	.224*	.360**	.296**	.318**	1								
J. accurate	.029	.341**	.344**	.491**	.656**	.367**	.398**	.412**	.386**	1							
K. reliable	-.030	.335**	.192	.450**	.562**	.248*	.206	.372**	.291**	.717**	1						
L. easily found	-.023	.235*	.257*	.492**	.367**	.303**	.317**	.325**	.389**	.393**	.350**	1					
M. consistent	.039	.481**	.398**	.680**	.459**	.307**	.245*	.426**	.529**	.550**	.624**	.448**	1				
N. comparable to past	-.016	.266*	.280*	.430**	.352**	.143	.410**	.333**	.404**	.496**	.407**	.429**	.353**	1			
O. comparable to industry	.124	.192	.114	.375**	.171	.236*	.231*	.107	.173	.324**	.175	.297**	.270*	.225*	1		
P. only part of the story	-.087	-.023	-.166	-.107	-.085	-.115	-.054	-.228*	-.267*	-.099	-.197	-.025	-.231*	-.050	.025	1	
Q. difficult to understand	.150	-.037	-.008	-.077	-.116	-.227*	-.144	.051	-.111	-.164	-.152	-.214*	-.189	-.090	-.206	.014	1

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Curriculum Vitae

Elisabeth Farmer (1979) studied International Management and Corporate Finance at the University of Vienna (Austria) and the Università Cattolica del Sacro Cuore in Milan (Italy). Upon successfully graduating with a Master's Degree in 2004, she spent two years in an internationally operating Management and IT Consulting company with focus on the financial services industry. In 2006 she returned to the academic path as a doctoral student and research assistant at the Department of Banking and Finance, University of Zurich (Switzerland). Here she was a member of Prof. Rudolf Volkart's and later of Prof. Alexander F. Wagner's team. At the Department of Banking and Finance she was responsible for the area of Executive Education and Managing Director of the Master and Diploma of Advanced Studies in Finance until March 2011 and is currently in charge of the department's Teaching Center. She also performed several teaching activities at undergraduate and executive education level. She graduated from her Ph.D. studies in April 2011.